

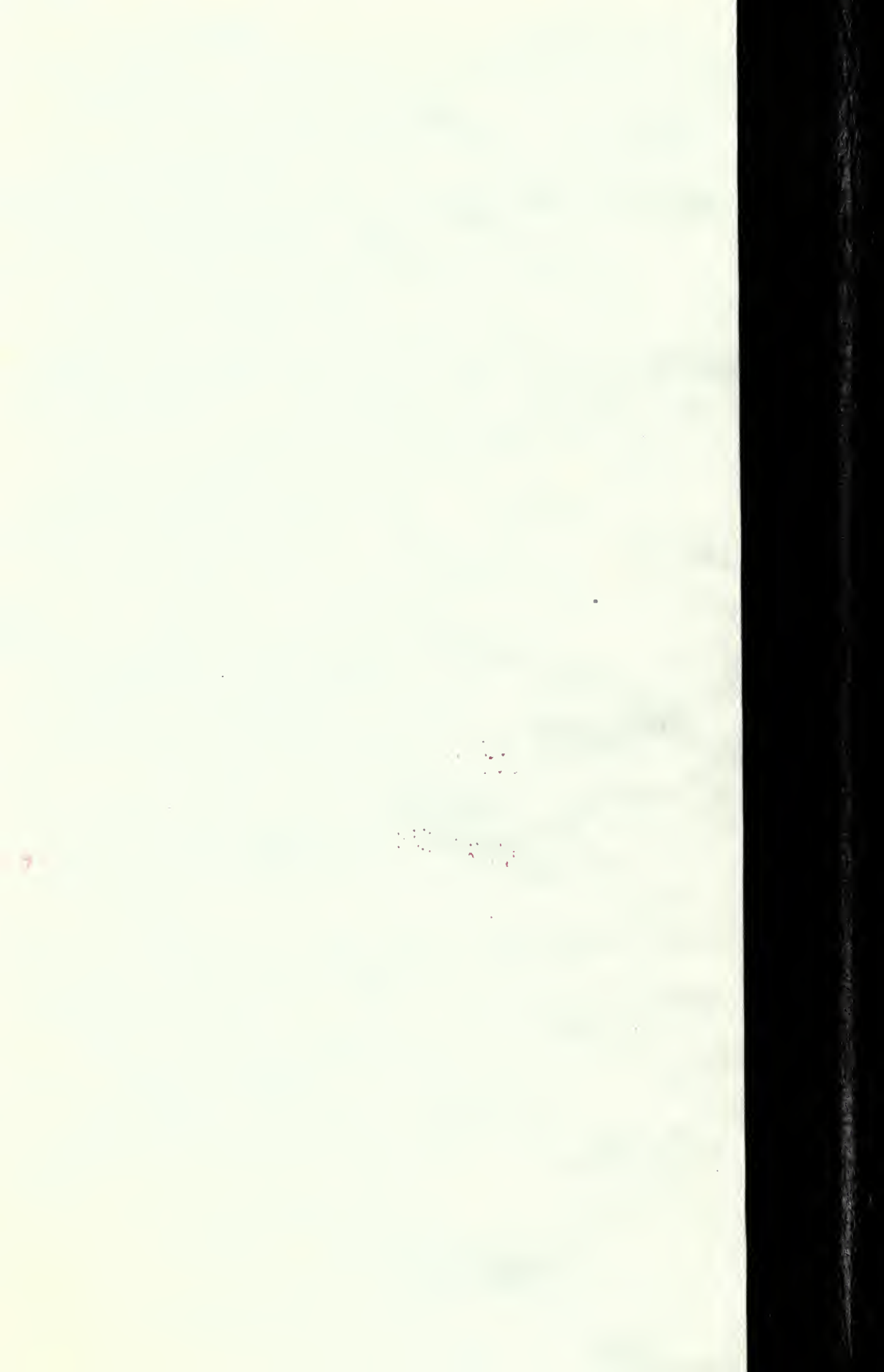
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## Anthropology

NEW SERIES, NO. 16

### A Late Pre-Hispanic Ceramic Chronology for the Upper Moquegua Valley, Peru

Charles Stanish

March 29, 1991  
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# A Late Pre-Hispanic Ceramic Chronology for the Upper Moquegua Valley, Peru

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## Abstract

This report offers a ceramic sequence for the late pre-Hispanic periods of the Moquegua Valley in southern Peru. The sequence is based on excavation and survey data from 17 sites in the Otor Valley, the northernmost tributary of the Osmore (Moquegua) Drainage. Five pre-Hispanic periods have been defined beginning at approximately A.D. 900 and continuing on to the Late Horizon (ca. 1475). The principal ceramic types for each phase are presented in this report.

## Introduction

In the last several years, a number of archaeological projects have been completed in the Moquegua Valley of southern Peru under the auspices of Programa Contisuyu (Rice, Stanish, & Scarr, 1989). This research has demonstrated that the Moquegua Drainage ranks as one of the key river valleys for understanding the later prehistory of the south central Andean region (fig. 1). Several Titicaca Basin cultures have colonized or influenced the Moquegua area, including Pucara, Tiwanaku, Lupaqa, and possibly the Colla (Murra, 1964; Goldstein, 1985, 1989; Stanish, 1985, 1989b; Feldman, 1989). Likewise, the large post-Tiwanaku coastal polity known as Chiribaya developed at the mouth of the Osmore Drainage in Ilo and extended its influence up the river valley (Belan, 1981; Watanabe, 1983). From both the coast as well as the altiplano, complex polities have sought access to the rich agricultural lands of the Moquegua region. The small size of the Moquegua Valley belies its crucial role in the development of the major south central Andean states.

A decade of research by Programa Contisuyu

has defined the major agricultural occupations in the Moquegua region. These include: (1) a poorly defined pre-Tiwanaku settlement system with Titicaca Basin affiliations (Feldman, 1989) in the mid-valley (ca. 1500 m), (2) a substantial Tiwanaku complex in the mid-valley (Goldstein, 1985, 1989), and (3) two post-Tiwanaku settlement systems, one along the coastal zone (below 800 m) and lower valley and a second occupation in the mid- to upper valley area (2000–4000 m) (Conrad & Rice, 1989) (fig. 2).

The ceramic chronology from the post-Tiwanaku settlement system located in the mid-valley and sierra is the subject of this report. From 1983 to 1985, members of the Proyecto Otor, as part of the Programa Contisuyu, conducted survey and excavations along one of the upper tributaries of the Moquegua Drainage. The Otor Valley is located in the upper sierra between approximately 2500 and 3200 m. Settlement survey discovered a complex settlement system that included 17 sites, ranging from small sherd scatters to large, nucleated sites. A five-period pre-Hispanic sequence was developed using several lines of evidence. This evidence included stylistic comparisons of ceramic and architecture with sites in northern Chile, the mid-Moquegua Valley and the Titicaca Basin, a single C-14 date from Otor, and several C-14 dates from the Moquegua Valley (fig. 3). While we still lack a suite of C-14 dates from the Otor area, the relative sequence of the ceramic periods is unambiguous. Furthermore, based upon published absolute dates from neighboring areas in the region such as northern Chile and the Titicaca Basin, we can provisionally assign the following dates to the Otor sequence: (1) Tumilaca (ca. A.D. 900–1200), (2) Otor (ca. 1200–1300/1350), (3) Estuquiña (ca. 1350–1450), (4) Estuquiña–Inca (ca. 1450–1500), and (5) Late Horizon or Inca (ca. 1500–1532).

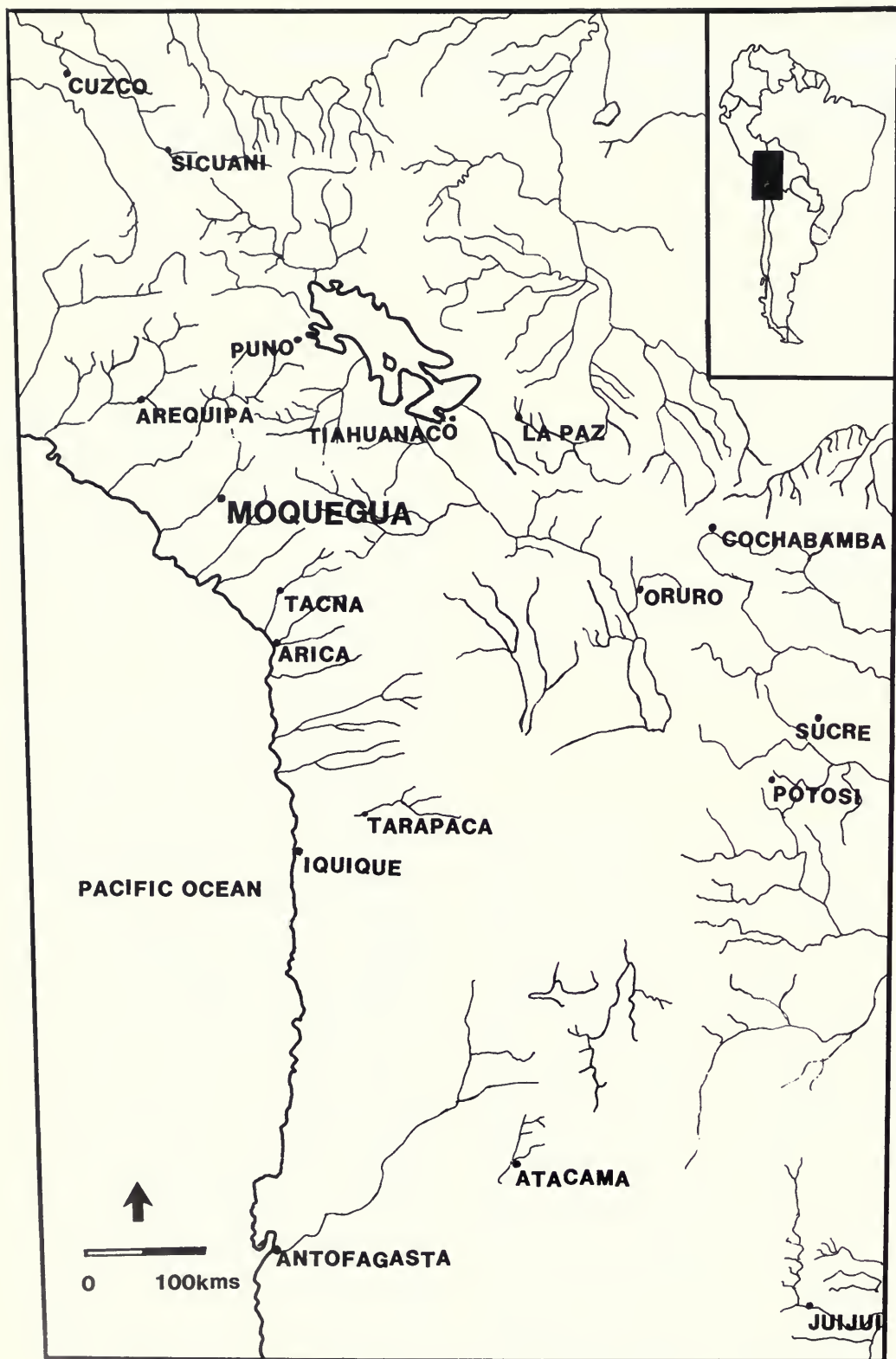


FIG. 1. The south central Andes.

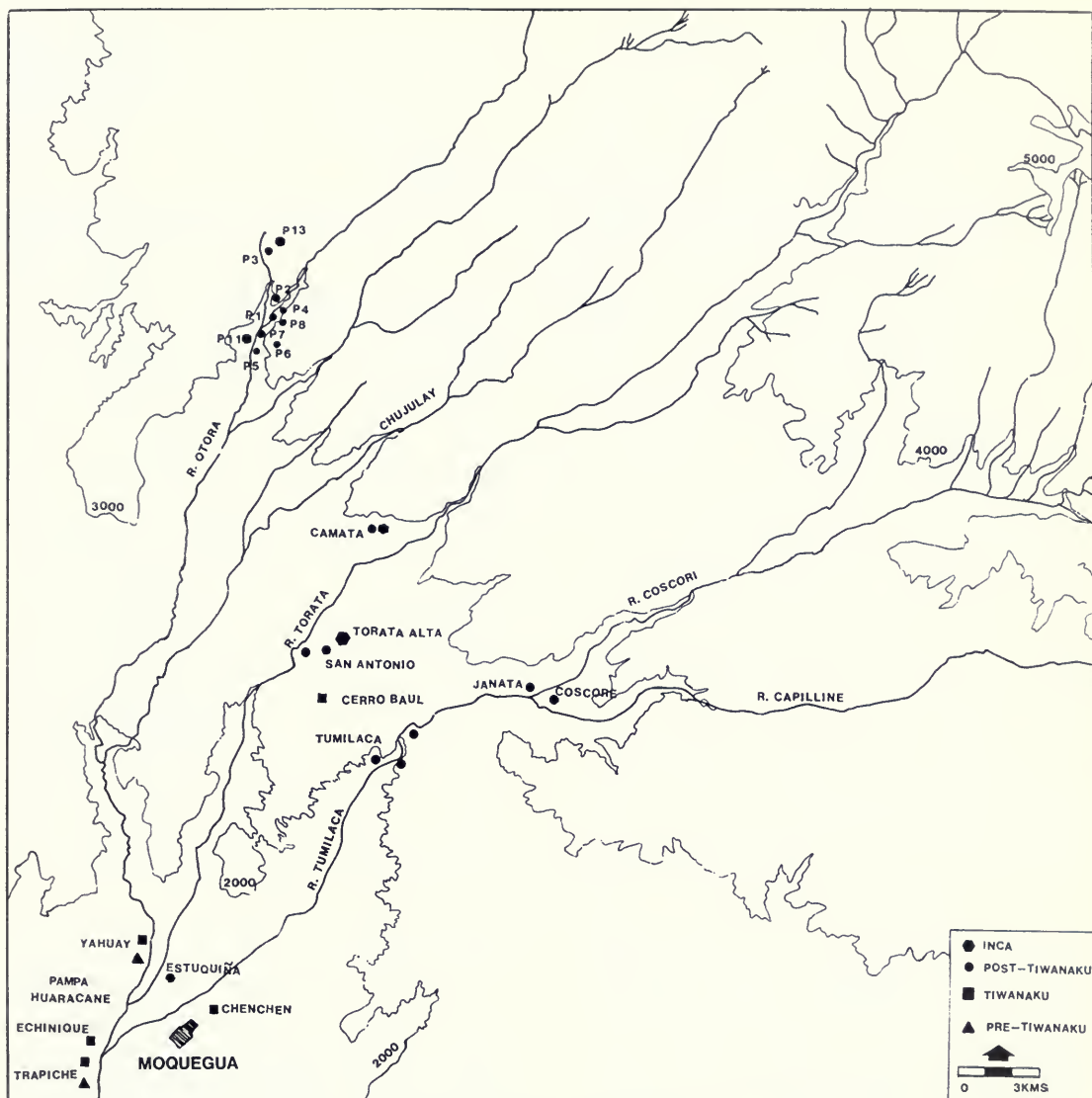


FIG. 2. The Moquegua Valley.

Comprehensive results of the Otoro Project have been reported elsewhere in detail (Stanish, 1985) and in schematic form (Stanish, 1987a,b, 1989a,b) and will not be repeated here. However, the ceramic sequence, which is built on more than 10,000 ceramic fragments and approximately 75 whole vessels, has not been systematically presented to date. The goal of this report, therefore, is to present a detailed ceramic chronology from the Otoro Valley that is applicable throughout the upper Moquegua Drainage and possibly beyond.

A ceramic chronology from the Otoro Valley is important for several reasons. First, the Otoro Val-

ley settlement history includes five phases in approximately 600 years, providing the opportunity for a detailed ceramic chronology for the region characterized by relatively short phases. Each of the phases is represented by single-component sites (with one exception), and the quantity of ceramic material is more than adequate to provide a typology for each phase.

The Otoro data span a time from the immediate post-Tiwanaku periods to the Late Horizon (ca. A.D. 900–1500). These periods have been the focus of considerable archaeological research and continue to be some of the most studied time pe-

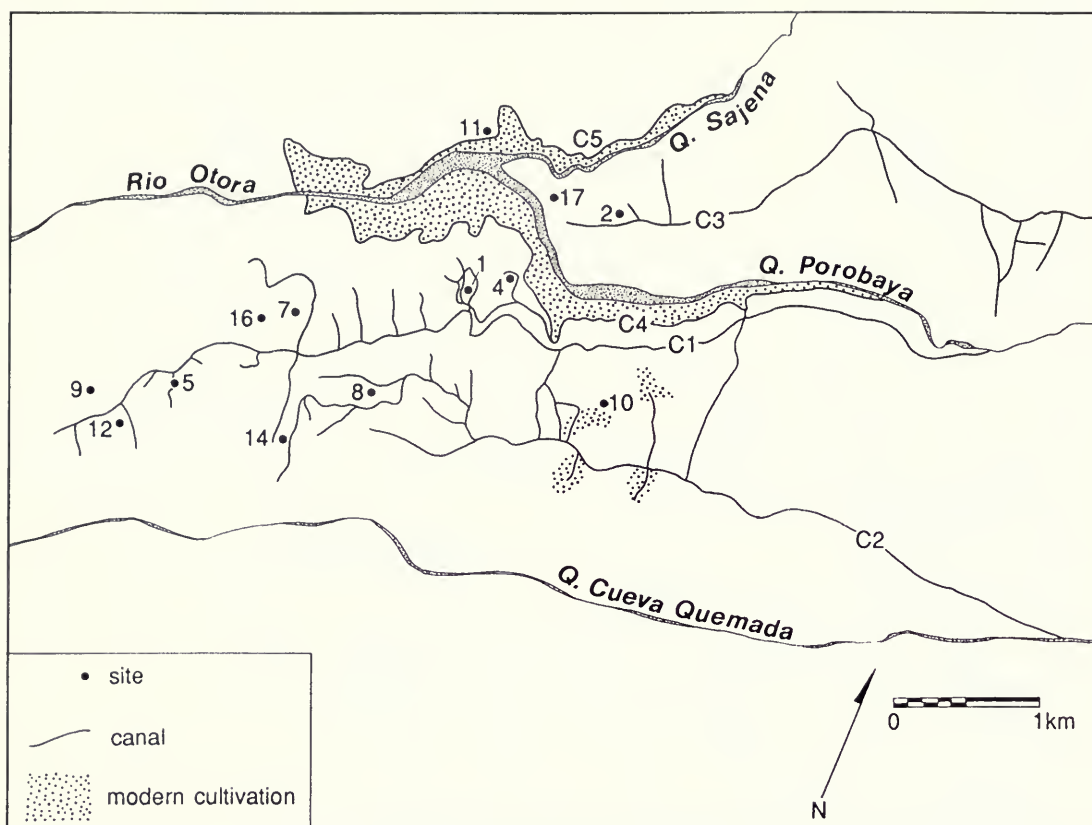


FIG. 3. Otor Valley archaeological sites.

riods in the region. The detailed chronology for the upper sierra presented here promises to be a useful methodological tool for future research, particularly in the coastal region, where a distinct settlement history is evident, as well as in the Moquegua Valley, where several post-Tiwanaku sites will be investigated in the near future.

This monograph also includes descriptions of a new ceramic type for the immediate pre-Inca periods in the Moquegua Valley. This is a local decorated ware, known as Porobaya Tricolor. This ceramic type appears to be geographically highly restricted to the drainage and will serve as an important archaeological marker of the settlement type (known as "Estuquiña") throughout the region. It is the only indigenous polychrome identified in the upper Moquegua Valley to date.

The ceramic chronology in this report also describes a number of exotic ceramics found in the Otor Valley through time. Several nonlocal styles were found, including Inca, Sillustani, San Miguel, Chiribaya, Gentilar, and a number of as yet un-

identified fragments. These nonlocally manufactured ceramics serve to highlight external influences in the region, although the use of ceramics alone does not permit us to define the specific nature of zonal complementarity mechanisms (Stanish, 1989a). The presence of such exotic styles, however, does raise questions that can be addressed with more refined methodologies.

The body of this monograph is divided into five sections that correspond to the five pre-Hispanic phases defined in the Otor Valley. A discussion of the political and economic patterns characteristic of each of the periods is avoided because these are already available in other sources (Stanish, 1985, 1987a,b, 1989a,b).

Each section includes evidence for the chronological assignments. Not surprisingly, the most useful criteria were the exotic decorated ceramic styles. Additional evidence for dating the particular phase is presented. Each section also includes background information, including a brief review of previous work in the Moquegua Drainage dur-



ing the period in question and a discussion of the known distribution of each of the important ceramic types in the region.

## Regional Chronologies in the South Central Andes

The two cultural areas that have influenced the Moquegua region are the Titicaca Basin and northern Chile. The Titicaca Basin was one of the great demographic, political, and economic centers of the Andes throughout the prehistory of agriculturally based settlement. Ethnohistorical documents and archaeological research have indicated that much of the south central Andes was directly or indirectly controlled by Titicaca Basin polities through time. Moquegua is no exception. Many of the principal exotic ceramic types found in Moquegua are from the Titicaca Basin.

Northern Chile is important for two reasons. First, the Azapa Valley in the extreme north of Chile is the most intensively studied region in the south central Andes. The ceramic chronologies for the area have been developed over several decades and afford the opportunity to date the Otoro materials by stylistic comparisons with these established sequences. The Azapa Valley discharges into the Pacific Ocean and is one of the most important coastal valleys in the south central Andean cultural area. It therefore provides a "window" on the nature of settlement histories of the coastal valleys such as Moquegua.

The second reason is more obvious. Several ceramic types found in Otoro and in the Moquegua region as a whole are derived from northern Chile. The nature of the cultural relationships between the upper and mid-sierra of Moquegua and the Azapa-Arica area remain problematic. A proper understanding of these coast-sierra relationships can only begin with a study of the ceramic material in areas such as Otoro.

### Northern Chile

The first ceramic sequence in the entire south central Andes was developed by Max Uhle from data recovered in Tacna and Arica in the first decades of this century. Uhle defined seven stages, the last four of which comprise the Tiwanaku and

later occupations of interest to us here: (1) Tiahuanaco, (2) Atacameno-Indigena, (3) Chincha-Atacameno, and (4) Inca. The ceramics associated with the Atacameno-Indigena stage are known today as San Miguel. The subsequent Chincha-Atacameno stage corresponds to the current Gentilar style, a phase argued by Uhle to be part of a widespread iconography associated with his theoretical pre-Inca "Chincha" empire (Uhle, 1917, 1919, 1922). The concept of a Chincha empire, which putatively extended south into Chile, north to Moche, and as far east as the Bolivian altiplano, has since been disproved.

Subsequent work by other archaeologists (Lacham, 1927, 1928, 1936; Bird, 1943; Muñizaga, 1957) identified a series of ceramic styles in the Arica area that were synthesized into a chronology by Dauelsberg (1961). There has recently been some consolidation of the Arica sequence as styles formerly thought to be temporally distinct were found in similar archaeological contexts, as suggested by Lumbreras in 1972. The work of Focacci (1969, 1981), Focacci and Erices (1971), Dauelsberg (1969, 1972), Muñoz Ovalle (1981), Nuñez Atencio (1963, 1965, 1966, 1972, 1974), Orellana (1964), Rivera (1975, 1977), and numerous others has produced a regional sequence of four basic stages: Formative, Tiwanaku, Regional Development, and Inca. A number of formerly chronologically distinct ceramic styles were incorporated into this revised sequence. The construction of this chronology has been greatly facilitated by a number of C-14 dates collected after Dauelsberg's original formulation. The recent chronologies offered by Tartaglia (1980) and Rivera (1977) accord well with the most recent data from research in the Osmore Drainage and represent the currently accepted absolute and relative chronology for the Azapa and Lluta river valleys.

The post-Tiwanaku periods in northern Chile are known collectively as the Regional Development period (Desarrollo Regional). Dominant ceramic styles include Maytas-Chiribaya, Chiribaya, San Miguel, Pocoma, Chilpe, and Gentilar. While not all of these styles are necessarily contemporary, most likely all are bracketed between the cessation of Tiwanaku influence in the area and the first occupation of the area by the Inca empire. These post-Tiwanaku, pre-Inca people are characterized by vigorous local developments as a response to the regional political and economic vacuum created by the retraction of the Tiwanaku presence.

## Titicaca Basin

The work of Tschopik (1946), Rydén (1947, 1957), Julien (1983), Lumbreras (1974a), Lumbreras and Amat (1968), Hyslop (1976), and others has served to identify certain ceramic assemblages with various geographical areas in the circum-Titicaca Basin and beyond. The basic chronological sequence for the agricultural periods of the entire region may be characterized by the following broad developmental stages: Lower Formative, Upper Formative, Tiwanaku, Regional Development, and Inca. The absolute dates of this developmental framework vary throughout the Titicaca Basin. At present, three separate areas have been investigated to the extent that we can provide some schematic local chronologies. These three areas are all directly relevant to the Moquegua region and include the northwestern side of the Basin (Collao), the southwestern side (Lupaqa), and the southern Basin (Tiwanaku/Pacajes).

Marion Tschopik's work (1946) is the primary source of information for post-Tiwanaku ceramics of the Collao region. She identified 12 post-Tiwanaku wares and 5 Inca wares in the area north of, and including, the modern town of Chucuito. The four most important ceramic groups are the Collao series (Collao Plain and Collao Black-on-Red), the Sillustani series (Sillustani Polychrome, Sillustani Black-on-Red, Sillustani Brown-on-Cream, and Sillustani Black-and-White-on-Red), two Allita Amaya types, and the Chucuito series (Chucuito Polychrome and Chucuito Black-on-Red).

At present, we still do not have good chronological control over these ceramic types. The two styles known as Chucuito were also first reported by Tschopik (1946, p. 37) and remain controversial. She defined a Chucuito Polychrome and a Chucuito Black-on-Red characterized by a fine-textured, pink to light red paste with a fine grit temper. Decorations include zoomorphic, plant, and insect naturalistic and linear designs painted in red and black for the Black-on-Red type. The Polychrome type adds white and purplish red colors on the Black-on-Red type. The vast majority of vessels are shallow bowls. The examples that Tschopik described are from the town of Chucuito. She suggested that the Chucuito type was distributed in the Chucuito area and north to Arapa. She further believed that the style was Late Horizon in date. Later research by Hyslop (1976) and Stanish (n.d.) has located both Chucuito Poly-

chromes and the Black-on-Red type in the town of Juli as well. Juli is located approximately 60 km from Chucuito. We therefore now know that this type extends much farther south in the Titicaca region.

The Chucuito ceramics appear to be Late Horizon in date, representing a local style manufactured during the Inca occupation of the Titicaca Basin. Two other Late Horizon polychrome types, Taraco Polychrome and Urcusuyu Polychrome, were also proposed by Rowe (1944, p. 49) and Tschopik (1946, p. 33). Tschopik expressed some doubts about the validity of the latter type and left it tentative. Finally, Tschopik identified several Inca ceramic types in the Chucuito area.

Some Sillustani types (discussed on page 14) would appear to be Late Horizon in date, and a few Sillustani motifs (such as fern patterns) are incorporated into Chucuito ceramics. On the other hand, some of the deeper Sillustani bowls with unburnished exteriors are most likely pre-Inca in date (e.g., see Julien, 1983, p. 252).

Allita Amaya is a controversial style because Tschopik did not illustrate many examples and it has not been found in great quantities by other researchers. According to Lumbreras (1974b), this style is restricted to the Lupaqa area of the Basin. The Allita Amaya style was dated by Tschopik as pre-Inca, based on the fact that it did not occur on the surface in association with the Chucuito, Sillustani, or Inca types. This proposition, however, remains hypothetical. Allita Amaya was characterized by Tschopik as having a medium-textured paste ranging from orange-brown to dark brown, a fine grit temper, poorly fired, and of variable surface treatment. Linear designs are executed in matte black and white paint.

The Lupaqa area of the Titicaca Basin is located along the lake from approximately near Puno south to the Río Desaguadero. The post-Tiwanaku ceramics of the region are poorly known. John Hyslop's survey of the Lupaqa zone (1976, p. 99) identified a number of sites that date to the post-Tiwanaku, pre-Inca periods, a settlement pattern he labeled the "altiplano macropattern." He further identified a number of Late Horizon sites and proposed a "Chucuito macropattern" to describe the settlement pattern of this period (1976, p. 138).

The principal post-Tiwanaku ceramic types included within Hyslop's survey of the Lupaqa zone were Allita Amaya, Tanka Tanka Black-on-Orange, and Mollo. The latter is most likely an exotic from the Bolivian side of the Titicaca Basin, where the site of Iskanwaya is the largest and best-known



settlement of this period (Ponce Sanguines, 1957, Arellano Lopes 1975a,b). Tanka Tanka Black-on-Orange is characterized by a compact orange and pink paste with linear black designs on unslipped surfaces (Hyslop, 1976, p. 435). Bowls are virtually the only shape reported in any quantity by Hyslop. Recent research at the site of Pukara Juli, a site that falls into Hyslop's altiplano macropattern, has discovered a local black-on-orange or black-on-red ware that appears to be related to both the Chucuito Black-on-Red and the Tanka Tanka types (Stanish, n.d.).

The Pacajes region includes the southern Titicaca Basin, east of the Río Desaguadero. It is the ancestral home of the Tiwanaku empire. The Tiwanaku ceramics of the Pacajes region have been amply described (Bennett, 1936). The post-Tiwanaku styles, in contrast, are poorly known. Rydén illustrates a number of pottery fragments that are post-Tiwanaku in date at sites such as Palli Marca and Wancani (1947, p. 184). The most distinctive ceramic type is a red-slipped, burnished bowl form decorated with black stylized llamas on the interior. This "Pacajes" or "Saxamar" ceramic type shows some Inca influence. Whether it is Late Horizon (after Inca geopolitical control in this case), or a local bichrome that is pre-Inca in date, or both pre- and Late Horizon, remains unknown.

Wise and Stanish (1988) reported the existence of two post-Tiwanaku types at the site of Lukurmata, on the Taraco Peninsula. These include a bowl form with interior spiral designs and a jet black, highly polished bowl form with some evidence of Inca influence (see also Julien, 1983, pp. 150–151). Inca and Chucuito-like ceramics were also found in the excavations. Curiously, a shallow, burnished bowl form with fish motifs was also recovered. The use of the fish design was identical to the llama designs on the Pacajes variety.

## The Otor Valley: Research Design

The Otor Valley is located in the northernmost section of the Osmore or Moquegua Drainage. The extreme aridity of this area of the Andes combines with the unique topography of the sierra to create an ecological situation in which arable or potentially arable tracts of land are confined to narrow river valleys and are separated from each other by vast expanses of plantless desert. Such ecological features serve to define absolutely the potential limits of agriculturally based settlement systems.

That is, in a landscape where water resources are critically low and in one characterized by a severe topography demanding irrigation systems, the maximum potential plant agricultural sustaining area is easily defined.

This is particularly true in the upper sierras (above 2000 m), where the tributaries are isolated and geographically discrete. Each upper sierra valley, therefore, is hydrologically restricted and topographically circumscribed; each valley can therefore serve as a bounded study area. In the Moquegua Drainage, the upper tributaries are also small in total area, each associated with less than 500 ha of modern agricultural land. In spite of the seemingly low total potential sustaining area, the upper sierras are replete with pre-Hispanic settlements and abandoned agricultural terracing.

The Otor Valley was chosen for intensive study after four months of preliminary field research (Stanish & Pritzker, 1983). This valley is one of four major upper sierra tributaries of the Moquegua Drainage. The entire valley was intensively surveyed and all sites were located (figs. 2, 3). Surface materials were collected in order to create a provisional chronology and typology of sites. We then excavated domestic structures on each of the sites in order to collect data necessary to test models of zonal complementarity (see Stanish, 1985).

Room excavations proceeded as follows: first, the aeolian deposition and volcanic ash from the explosion of the volcano Huaynaputina (near Omate) in A.D. 1600 was cleared off. Once this overburden was stripped and recorded, the excavation proceeded at a very slow pace to the floor, usually defined by a soil texture and color change and the presence of undisturbed hearth ash deposits. Every room, defined by the external walls, was assigned a unit number. Within each room unit internal features, such as walled areas, concentrations, etc., were given a feature number. Lot numbers were assigned on the basis of similar archaeological contexts such as "above floor fill," "floor context," "fill from feature 1," etc. The recording system therefore had three numbers: site-number=lot (e.g., P1-21=7). A lot represents an analytical category. A feature represents a physically related set of artifacts. Usually, a feature also defined a lot or specific group of lots; rarely did an arbitrarily defined lot extend beyond the physical limits of a feature, although the feature itself could be composed of different lots, depending on the level of specificity the field supervisor wished to maintain in collecting the material.

All rooms were excavated to sterile subsoil. Ev-

ery room, with one exception, had only one floor owing to the rapid use and abandonment of sites. The thickness of the floors, however, differed quite a bit. It was rare to have more than 50 cm of cultural fill from the bottom of the volcanic ash to the sterile subsoil. Most rooms had less than 35 cm of occupational fill and postoccupational, pre-1600 accumulations. These thin midden deposits were due to the relatively brief occupations of most Otor Valley sites as well as the lack of preservation in the upper sierra zone. Such shallow deposits contrast sharply with coastal and mid-valley sites, where middens may exceed 2 m in thickness.

A number of tombs were excavated as well, including several collar tombs on two sites. Most of the whole vessels utilized in the chronology are from these tomb contexts.

### Ceramic Descriptions Terminology

Because considerable research remains to be completed in the Moquegua region, I have adopted a highly conservative system of ceramic classification that relies on surface decoration and shape. I have followed all prior terminology by Programa Contisuyu members, even when these terms have not been published. The ceramic types “Estuquiña bowls” and “Tumilaca” and the morphological term “bootpot” have been retained from the common usage by other investigators in the Programa. I have avoided the temptation to name new types, except in one case (Porobaya Tricolor), where we found a local polychrome not described elsewhere.

The vast majority of ceramics in the Otor Valley are black-on-red types and no color key was needed. Almost all colors, therefore, represent a black-on-red color. The occasional polychrome is described in the text and a color key is included where appropriate. All color descriptions in this report are expressed with the Munsell terminology.

The most difficult problem was the lack of a consistent terminology for describing the surface treatment of ceramics from the upper sierra in the Moquegua region. I have therefore employed the following categories of surface treatment in this report that, in my opinion, best serve the needs of describing the Otor materials:

- 1) Polished: Highly burnished to a very smooth surface, no burnishing marks evident.
- 2) Finely burnished: Burnished to a polish-like surface, burnishing marks evident.

- 3) Burnished: Burnished with obvious marks over the entire surface, some smooth pitting or a slightly rough surface possible.
- 4) Slightly burnished: Occasional burnishing marks present, surface rough and/or undulating. Possible rough pitting.
- 5) Finely wiped: Wiping striations present. Surface well wiped to a smooth “sandpaper” finish.
- 6) Wiped: Wiping striations present, possible pitting on a “sandpaper” surface.
- 7) Poorly wiped: Wiping striations present, surface pitted or rough.
- 8) Rough: Uneven, rough, pitted surface, no burnishing or wiping marks evident.

### The Otor Valley

The 17 archaeological sites in the Otor Valley range from small sherd scatters and destroyed sites to well-preserved, multiroom Estuquiña Period settlements. The sites were discovered in an intensive survey of the region and represent all extant sites in the Otor, Sajena, Paralake, and Porobaya valleys.

One peculiar pattern was quickly evident in the Otor Valley investigations. With very few exceptions, all sites in the region were single component. This was demonstrated by the fact that, with one exception, no excavated structure had more than one living surface. Furthermore, the entire depth of the archaeological deposits in the Otor Valley was less than 50 cm, and often less. These deposits were almost always characterized by an unstratified, unconsolidated matrix. This is in contrast to sites in northern Chile or the Titicaca Basin, where stratified floors on residential sites are measured in meters, not centimeters. Finally, as we will see below, the ceramic material from each site is highly consistent, a fact that corroborates the observation of the single component nature of the sites. In addition, decorated pieces that have been dated in the Titicaca Basin or in northern Chile to different time periods are consistently *not* found on the same site in the region, again supporting the observation of single component sites.

This pattern of single component sites is also the norm in the Moquegua Valley, again with a few notable exceptions. This pattern is due to a process of rapid site settlement and abandonment as well as to the immigration of colonists, who



Period	Sites	Political Economy
Colonial	P-10, P-11, P-14	Spanish colonial encomienda. Lupaqa colonies in Torata Valley.
Inca	P-11, P-13	Imperial administration with marked Lupaqa influence. Major Inca–Lupaqa site in Torata Valley.
Estuquiña–Inca	P-1, P-3, P-6	Independent polities engaged in intensive interzonal exchange. Marked Colla influence from Titicaca Basin. First evidence of Inca influence in valley.
Estuquiña	P-1, P-2, P-3	Independent polities engaged in intensive interzonal exchange. Probable Colla influence from Titicaca Basin.
Otora	P-4, P-7, P-8, P-9, P-12, P-16	Multiethnic colonization by Titicaca basin and coastal polities. Chiribaya and Colla influence.
Tumilaca	P-5	Colony of local tiwanaku settle from mid- and lower Moquegua Valley.

FIG. 4. Otor Valley chronology.

founded new sites. Elsewhere I have suggested that a combination of agricultural strategies in an environment of reduced water availability promoted the rapid abandonment of settlements (Stanish, 1987a; Ortloff, 1989).

Whatever the causes of site abandonment, the implications for building a ceramic chronology are enormous. It is not necessary to isolate specific stratigraphic levels and correlate these with others on nearby sites in order to have a sufficient sample of ceramic material for an adequate chronology. Once a site has been tested and demonstrated to be a single component occupation, the entire collection of ceramic material from the site can be used to define the assemblage for that period. This is the methodology used to construct the following ceramic sequence (fig. 4).

#### Tumilaca Period

The Tumilaca Period takes its name from a site in the mid-Moquegua Valley (Bawden, 1989; Bermann et al., 1989). The type site was first identified by Lic. Romulo Pari of the Universidad Catolica of Arequipa. The Tumilaca site has also been excavated and described by Garth Bawden (1989) and other members of the Programa Contisuyu. Several C-14 dates from a Tumilaca component

at the site of El Yarál in the lower Moquegua Valley cluster around A.D. 900–1000 (see Rice, Stanish, & Scarr, 1989).

Based on data from the entire Moquegua Drainage, Bermann et al. (1989) have argued that the Tumilaca Period represents an autonomous post-Tiwanaku polity that flourished after the collapse of Tiwanaku state influence in the area. Many of the motifs common in Tiwanaku 5 contexts (Chen Chen phase—see Goldstein, 1985, 1989) continued into the Tumilaca Period. The major difference is in execution and manufacture. Designs are less carefully executed on the Tumilaca wares. In the opinion of Goldstein (1985) and Bermann et al. (1989), the fineware ceramics were not imported from the Titicaca Basin, as in the Chen Chen or Tiwanaku 5 Period, but were manufactured in the Moquegua region.

In Otor, there is a single site from this period called Kilometer 8 or P-5. It represents the first settlement in the valley and is merely a small hamlet of approximately three to five domestic units. In spite of the small size of the hamlet, the inhabitants of P-5 were responsible for the initial construction of a long (7.4 km) canal that drew water from the Río Porobaya.

Several structures were excavated on P-5. An impressive quantity of decorated ceramics was recovered in all of the residential structures tested,

a pattern that contrasts with later sites, where decorated ceramics constitute a much smaller percentage of the total assemblage.

The ceramic assemblage (figs. 5–62) is very similar to that described by Goldstein for Tumilaca Period ceramics from Omo (1985). The slightly coarser temper in the finewares and the poorer execution of the designs conform to Goldstein's observations of ceramics of the same period at Omo. Paste color in the decorated vessels is fairly consistent, ranging from reddish yellow (5 YR 7/6) to a light reddish brown (2.5 YR 6/4). Interiors are generally finely wiped to wiped, while the decorated exterior is burnished to finely burnished. The one complete vessel recovered from the site has a feline motif (fig. 48) that is common on late Tiwanaku ceramics (Rydén, 1947, p. 53; Posnansky, 1957). Other Tumilaca Period ceramics from P-5 also have some typical Tiwanaku 5 Period designs, including step stairs (figs. 26, 42), pendant circles (fig. 17), and interior lip wavy lines (figs. 7, 36).

A distinctive strap handle molding in the form of a cross on several utilitarian vessels (figs. 55–59) has been reported by Rydén in a number of Tiwanaku and multicomponent sites in the Bolivian side of the Titicaca Basin (Rydén, 1957, p. 75, fig. 56–10, p. 91, fig. 65–p) and is common in surface finds from the extensive Tiwanaku sites in Moquegua (Goldstein, 1985). This olla or jar is made of a coarse-tempered, yellowish brown clay. It is unslipped.

The presence of decorated and plainware bowls (figs. 13, 62) distinguishes the Tumilaca assemblage from Tiwanaku 5 ones. Figure 13 is an exceptional example of this bowl form with Tiwanaku-like motifs. The surface is finely burnished and the paste is reddish brown with a fine sand temper.

### Otora Period

Three residential sites are dated to the Otora Period, defined as the time between the end of the Tumilaca Period and the rise of the fortified, Estuquiña Period settlement system. This period is therefore broadly defined, and Otora Period sites may not necessarily be contemporary.

The site of Cuesta Alta (P-7) is located several kilometers up the valley on the same canal system as P-5. Cuesta Alta is a settlement with about 65 structures. It is open and undefended. Based on

land use, architecture, and ceramic criteria, P-7 has been interpreted to have developed out of the Tumilaca hamlet at P-5.

The ceramic assemblage from Cuesta Alta includes approximately 2,000 fragments collected from intensive survey and the excavation of 13 structures. In spite of this large sample, there are only five decorated pieces from the site (figs. 63–67). Figure 64 shows a Tumilaca fragment. Figure 66 is either a Tumilaca or a Chiribaya fragment.

The most distinctive type on the site is the undecorated, deep, straight-sided bowl (figs. 71–73, 75, 78, 91, 92, 94–97). Of the 11 fragments in the collection from the site, 7 have a red slip and 4 are not slipped. This is a simple wash, however, and is not otherwise decorated. It is therefore significant that in this earliest of the Otora Period sites, there is no bichrome or polychrome ceramic style manufactured in the region and virtually no evidence of exotic imports into this settlement.

A second Otora Period site is known as Porobaya Chica, or P-4. The site has approximately 24 structures that comprise about nine domestic units (Stanish, 1985, 1989a). It is located 2 km up valley from P-7. The agricultural fields associated with the site draw their water from the same source as did P-5 and P-7.

Two exotic ceramic styles are found on P-4, including Chiribaya and San Miguel. One whole Chiribaya vessel was found in a subfloor tomb in a residential structure on the site (fig. 109). The vessel is characterized by black and white paint over a well-burnished weak red (10 R 5/3) slip. Several other Chiribaya fragments were discovered in domestic contexts (figs. 102–108). Several of these are characterized by the typical white dot motif common on Chiribaya pottery, while other fragments either lack dots or are too small to be representative of the vessel as a whole.

In northern Chile, Maitas–Chiribaya seems to be the earliest post-Tiwanaku culture. It is described as being stylistically identical to Tiwanaku Period Maitas with the exception that the Chiribaya variant has points or dots on the ceramics (Focacci, 1982, p. 69). This would therefore make the Chiribaya iconographic style a very late Tiwanaku phenomenon or the earliest post-Tiwanaku culture. Data from the lower Moquegua and Ilo valleys confirm this general interpretation. In the Ilo Valley, where the Chiribaya style was first described (Ghersi Barrera, 1956), ceramics with the distinctive dot designs appear to be later than Maitas-like ceramics. Maitas, in fact, is sty-



listically related to the Loreto Viejo tradition, a late Tiwanaku assemblage first isolated in the Ilo Valley.

Other data regarding the chronological relationship among Tiwanaku, Maitas, and Chiribaya are not so clear, however. The large settlement of El Yaral in the Moquegua Drainage, for instance, has both Tiwanaku and Chiribaya ceramics, but their horizontal and vertical distribution suggests discrete, noncontemporary areas (Garcia M., 1988; Rice & Conrad, pers. comm.). Overall, the similar iconography on both ceramic assemblages, similarities in domestic components, and the proximity of Chiribaya and Late Tiwanaku or Tumlaca settlements suggest a genetic relationship between these two cultural traditions. Chiribaya developed directly out of the Tiwanaku settlements.

A critical review of the C-14 dates in northern Chile supports this interpretation that the Chiribaya variant is later than the iconographically related Maitas styles. Focacci (1982, p. 74) lists five dates for this phase, four of which fall between A.D. 1040  $\pm$  145 and 1255  $\pm$  75. While the fifth date fits comfortably within the Maitas time frame, it is so much earlier than the others (A.D. 730  $\pm$  80) that it can be justifiably considered inaccurate, particularly in light of overwhelming contrary data. Based on my reading of the Azapa Valley materials and on comparative data from the Ilo Valley, I would place the Chiribaya variant as later than, and genetically related to, Maitas. Maitas and Loreto Viejo represent the Expansive Tiwanaku populations (or at least the late Tiwanaku "influenced" local groups) in the valley, whereas Chiribaya represents an influence of as yet undetermined nature from the post-Tiwanaku regionalized polities centered in southern Peru.

This is not to say that the Maitas-Chiribaya style in the Azapa Valley is necessarily contemporary in all of its phases with its Chiribaya counterparts located in the Moquegua Drainage, as represented by the sites of Algorrobal, El Yaral, and others (Rice & Conrad, pers. comm.; Watanabe, 1983). The Tiwanaku presence in the Osmore Drainage is more intense and probably longer in duration than in Chile. That is, the regionalization process began earlier in the more southerly valleys, with a resultant uneven historical development into various post-Tiwanaku Tricolor del Sur ceramic traditions throughout the areas of former imperial control. Furthermore, the preliminary research suggests that we can subdivide the Chiri-

baya sequence. At least one phase correlates to the beginning of the collapse of the Tiwanaku polity while a second phase would be contemporary with the San Miguel traditions.

With the present data at hand, the most reasonable interpretation is that Chiribaya ceramics in the Azapa Valley are not indigenous, but rather are the result of exchange relationships with coastal Chiribaya populations in the Ilo-Moquegua and possibly Tambo drainages. Conversely, the contemporary San Miguel ceramics, which are found in the Ilo Valley on the coast and as far up as the Otor Valley, are also not indigenous to the Moquegua Drainage but were most likely manufactured further south.

Several fragments of the San Miguel style were discovered in domestic contexts on Porobaya Chica (P-4) as well (figs. 110-114). All of the fragments probably came from the same vessel. Curiously, the San Miguel fragments were found in the same room (in floor context) as the tomb that had the complete Chiribaya pot. The P-4 San Miguel specimens are characterized by a red-and-black over a creamy white surface. The exterior is polished, the interior is wiped. The temper is a fine to medium sand.

San Miguel ceramics date between A.D. 1050 and 1350 (Mostny, 1960) in northern Chile and represent the emergence of a vigorous local tradition radically different from that of the preceding Tiwanaku periods. These ceramics were originally published as Arica I by Bird (1943) and are occasionally still identified as such in the literature. Curiously, the San Miguel style has similarities to contemporary ceramics from northwestern Argentina and the Chilean altiplano and sierra. This relationship suggests the establishment or formalization of zonal complementary links between the coastal valleys and the highlands along the same latitudes. In particular, the use of a creamy slip with spiral designs radically differentiates the San Miguel tradition from its Tiwanaku predecessor and resembles contemporary "Diaguita" or "Santa Maria" assemblages. San Miguel and Chiribaya styles (that is, "pure" Chiribaya, particularly those that include white dot designs on ceramics) have been found in similar contexts in the Moquegua and Ilo valleys, as well as in northern Chile (Focacci, 1982; Stanish, 1985). Given the strong overlap of absolute dates from each of these styles as well as the coexistence of each in similar archaeological contexts, it is most likely that they are contemporary.

A possible Collao bowl was discovered in domestic context on P-4 as well (fig. 115). Collao ceramics are characterized by coarse, heavy, brick-colored pastes with a large, white grit temper (Tschopik, 1946, p. 21). As defined by Tschopik, the decorated Black-on-Red type has crudely designed and poorly executed black linear designs on jars, bowls, and cups. The fragment found on P-4 has this characteristic. The design is very similar to those illustrated by Tschopik. It is a shallow bowl form with a very thin lip.

The major undecorated ceramic type on the site of Porobaya Chica is a bowl form (figs. 116–121). About one-half of the sample ( $N = 27$ ) of the bowls are unslipped, while the other half are slipped with a red to light red (10 R 5/6) wash. The forms range from deep and straight-sided to deep and incurving. At least two Estuquiña bowls with the characteristic lip lug were found (figs. 130–131). Paste colors vary widely from reddish brown to red.

The plainware assemblage from P-4 includes a vessel that is known as a “bootpot” (figs. 122, 126, 128). Bootpots are found in Chiribaya sites in the lower valley and reach their most common use in the later Estuquiña–Inca Period. The general bootpot shape, though not the specific type found in Otorá, has occasionally been reported from the circum-Titicaca Basin area (e.g., Mollo–Ponce Sanguines, 1957) and northwestern Argentina (Rydén, 1936, pp. 163–168). There are no published bootpots from the Titicaca Basin proper, however. The distinctive opposing strap handles, as found on the Porobaya vessels, have been found to date only from post-Tiwanaku sites in Arequipa, Ilo, and the Moquegua Valley. The distribution of the bootpot with opposing strap handles seems to follow the general distribution of Estuquiña bowls, a relationship that remains obscure but increasingly tight. Like the latter, the bootpot is found on Chiribaya sites but reaches its greatest frequency on the sites contemporary with P-1.

The illustrations of asymmetrical or shoe-shaped vessels in northwestern Argentina (Rydén, 1936) are considerably different from the bootpots discovered in Otorá. Although the overall shape is similar, the published vessels are smaller, have elaborate anthropomorphic or zoomorphic decorations, and probably functioned differently. Rydén quotes the early Argentinian archaeologist Juan Ambrosetti, who suggested that these vessels were used as cooking pots and were designed to be set close to the fire. Rydén himself suggests that the bootpot shape was designed as a hanging vessel. What is increasingly evident is that it is inappro-

priate to classify all ceramic vessels of this shape into a single functional type. There is a great variability in style, function, and cultural context that is at present poorly understood.

I have suggested earlier that the bootpot functioned to toast maize and perhaps other grains (Stanish, 1985). Its general distribution throughout the south central Andes corresponds to maize-growing areas, and the bootpots of Porobaya are ideally suited for toasting maize on a large scale. The extended front part would easily fit into an open fire and be useful for cooking foods, as originally suggested by Ambrosetti. The grain being toasted would fill the vessel parallel to the base, but the neck and top, being slanted at an acute angle relative to the base, would allow the escape of moisture while still retaining heat. The handles, placed opposite to each other on the rim and parallel to the wide side of the vessel front, would allow the pot to be shaken and mixed to permit moisture loss and prevent the burning of the grain. It is not coincidental that virtually all of the bootpots recovered (with the exception of three) are heavily carbonized on the front end.

Several other vessel forms were also found on P-4. These include an olla (fig. 129), jar forms (figs. 123, 127), and cups (fig. 125). The complete cups were recovered from the cemetery excavations. Each of the cups is red slipped and burnished on the exterior. The interior of each vessel has a red band around the lip and is unslipped and wiped to the base. All of the whole cups have significant quantities of large-grained, white inclusions in the temper. This is a characteristic of Chiribaya vessels on the coast at Algorrobal and at the lower Moquegua Valley site of El Yarál (Conrad & Rice, 1989).

The third major Otorá Period site is located high on the Cuajone ridge and draws its agricultural water from the neighboring drainage. This site, called Cuajone or P-8, is characterized by approximately 30 structures that make up approximately 16 domestic units. The site is open and undefended. It has been interpreted to be an altiplano colony, based on ceramic, agricultural land use, and domestic architectural criteria (Stanish, 1985, 1989a).

As at P-7, there are very few decorated ceramics at P-8. The few fragments recovered are consistent in style and paste and are characterized by a black-on-red decoration (figs. 135–141). The semi-compact paste is light reddish brown in color (2.5 YR 6/4). The exterior is decorated with the black paint over a burnished red (10 R 6/8) surface. The in-



terior is a wiped paste surface, otherwise undecorated. The temper is medium sand with very coarse inclusions. These coarse inclusions immediately recall Tschopik's (1946) post-Tiwanaku types in the Collao region of the Titicaca Basin.

The few examples of bowls on the site are characterized by relatively thin-walled, moderately deep vessels (figs. 149–160). One whole vessel (fig. 144) was found on the surface of a collar tomb and is poorly burnished and unslipped. Approximately 70% of the identifiable bowl fragments of the entire sample ( $N = 18$ ) have a red, burnished slip and about 30% are unslipped.

Jar and olla forms were also recovered from the site of Cuajone (figs. 142, 143, 145–148). Three jar handles (figs. 142, 146, 148) have a protuberance on the rim, or a distinctive marker for this assemblage. All three jars are red slipped and burnished on the exterior. The ollas are all unslipped.

### Estuquiña Period

The Estuquiña Period is characterized by a radical settlement shift to fortified, hilltop sites (Moseley, n.d.) and the adoption of completely above-ground chulpa burials. Colana or P-2 is the only Estuquiña Period site without evidence of Inca influence and therefore without an Estuquiña–Inca phase. The several dozen structures on the site compose approximately 32 domestic units (Stanish, 1985), in the most distinctive example of the intrusive domestic architectural style first seen in the Otorá Period site of P-8 (Stanish, 1989a). The site is located on the Colana ridge at approximately 2800 m where it is the only site associated with approximately 140 ha of agricultural terracing.

The ceramic assemblage of Colana is characterized by a general absence of decorated wares (figs. 165–180). Out of about 2,000 specimens collected, only 6 pieces have surface decoration. Figures 167 and 171 are examples of decorated bowl forms. The pastes of these bowls are dark reddish gray (5 YR 4/2) to pink (5 YR 7/4) with medium sand and yellow mica temper. The mica is probably naturally occurring in the clay, although this remains to be tested. Both the interior and exterior surfaces are well burnished, red slipped, and have a narrow black line (exterior decoration not shown).

The assemblage at P-2 includes numerous other bowl forms (not shown) that are similar to those found on P-1 and P-3 (see below). These bowls tend to be thicker lipped and shallower than the

bowls from the Otorá Period. Significantly, virtually all shallower bowls of this type are red slipped. Three Estuquiña bowl fragments are found on Colana as well. Two are typical Estuquiña bowls (figs. 169, 170), the third is a straight-sided bowl with a rim lug (fig. 168).

One whole decorated vessel was recorded from a looted tomb (fig. 178). The olla is red slipped, poorly burnished, with a black to dark gray design. The semicircle designs correspond to a distinctive, unnamed type. Other whole vessels from looted tombs include bootpots, jars, and ollas (figs. 175–177, 179, 180).

### Estuquiña–Inca Period

The Estuquiña–Inca Period is characterized by the continuation of the fortified hilltop settlement pattern and the use of chulpa burials. Several other patterns begin in this period as well, including the development of an indigenous polychrome ceramic style and the intensification of exchange networks, particularly with the coast. The first evidence of exotic, Late Horizon ceramics occurs in this period as well. These Late Horizon ceramics are represented largely by Inca and Sillustani types.

There are three principal Estuquiña–Inca sites in the Otorá region. The main site is Porobaya or P-1, located at the junction of the Sajena and Porobaya rivers, which form the Otorá. P-1 has approximately 120 structures. It is located on a high hill, is fortified, and has a number of chulpas in the immediate vicinity of the site. Sajena or P-3 is located up valley and is also on a fortified hilltop. The two sites are very similar in surface characteristics. The Paralake or P-6 site is located on a lower hill, south of Otorá in the neighboring valley. It also is fortified and has chulpas.

The most common exotic ceramic type on Porobaya and Sajena is identified within the Sillustani tradition (Tschopik, 1946; Lumbreras & Amat, 1968; Julien, 1983). The Sillustani ceramic style has been identified as a local Titicaca Basin tradition beginning in the pre-Inca period and continuing on into the Late Horizon. Julien's excellent summary of the Sillustani style, including examples excavated by Ruiz Estrada at the type site, makes a detailed description here unnecessary (Julien, 1983, pp. 116–125). A brief review is sufficient.

Sillustani decoration is almost always found on bowl forms and is characterized by burnished red or cream surfaces with black and occasionally white

designs on the interior (Julien, 1983). Pre-Inca Sillustani bowls are deeper than the Late Horizon ones. The lips on the pre-Inca bowls tend to be thinner and do not curve inward. Decorations tend to be simpler than in the later styles. Inca influence on the Sillustani style is evidenced therefore by thicker lips, finer exterior burnishing, and elaboration of design motifs (Julien, 1983).

Sillustani ceramics on Porobaya would appear to be principally Late Horizon in date, with a smaller number of pre-Inca fragments present in similar contexts. All of the fragments in the Otoro sample are most likely imports into the valley. This is deduced from the superior quality of manufacture relative to the rest of the assemblage and the similarity of the Porobaya examples to available illustrations of Sillustani ceramics in Tschopik's original report. Specific types include Sillustani Polychrome, Brown-on-Cream, Black-on-Red, and Black-and-White-on-Red, according to the typology offered originally by Tschopik (1946, pp. 25–27). Sillustani ceramics were found in virtually every room excavated at Porobaya (P-1).

The finest example of a Sillustani ceramic fragment comes from an excavated structure floor at the top of the site of Porobaya (structure #28, Stanish, 1985, appendix 1). The fragment (fig. 181) was approximately one-half of a complete bowl, placed face up in the center of the room. It is possible that this fragment was an offering at the time of the abandonment of the room because it was in area otherwise without much debris at the top of the floor deposition.

The piece is a classic example of a Sillustani Black-and-White-on-Red, as described and illustrated by Tschopik (1946, p. 27). The black line decoration is paralleled by white dots along the entire surface except in the middle, where the white paint most likely has disappeared. The paste is very compact and light red (10 R 6/6) in color. Temper consists of a yellow mica, some white inclusions, and fine sand. The interior surface (shown in fig. 181) is characterized by a finely burnished red (10 R 4/6) slip with the black and white decorations. The exterior is unslipped and slightly burnished but is uneven and pitted. The base is rough. The existence of the typical Inca double lug on the lip leaves little doubt that the piece is Late Horizon in date.

Several other Late Horizon Sillustani pieces (figs. 182–186, 192, 194–200) were found on the site. All of these were fragments found in domestic

structure contexts. Four of these examples have the lugs on the lip-like Inca plates (figs. 181, 186, 195, 197) and it is likely that the other examples came from vessels with lugs as well. All examples are characterized by a red to deep red, finely burnished interior with black paint, and a burnished to poorly burnished exterior. Paste colors vary from light red (10 R 6/6) to very dark gray (5 YR 3/1).

One fragment, also found in an excavated floor context (fig. 192), is a classic Sillustani Polychrome (Tschopik, 1946, p. 25, no. 11). This plate fragment is polished on the interior with a light gray to gray (7.5 YR N7–N6) surface with reddish brown designs. The exterior is unslipped and wiped with some surface pitting evident. The paste is pinkish gray (7.5 YR 6/2) and compact.

Several of the Sillustani examples (figs. 187–191, 193) are most likely pre-Inca in date as they correspond to earlier types suggested by Julien (1983, pp. 116–125). The interior red slip is not as deep in color as the Inca Period types, being a reddish brown to dark reddish gray (5 YR 5/4–5 YR 4/2). Two of the bowls are deeper than the Inca Period ones, and the lips on all three are considerably thinner. The variable paste colors (reddish brown to red) in the same vessel indicate a less even firing than the Late Horizon examples. Interiors are poorly burnished to finely wiped, exteriors are poorly burnished to rough. A final fragment (fig. 199) is included in the Sillustani type with some reservation.

Sillustani and Sillustani-like ceramics have a wide range throughout the region. Lumbreras and Amat identify 10 sites on the northwestern side of Lake Titicaca in which Sillustani ceramics have been found (1968, p. 105) and suggest that this ceramic tradition developed out of an earlier style known as Kekerana (Lumbreras & Amat, 1968, p. 93). Like Sillustani, Kekerana is commonly found in the northwest Titicaca Basin, an area that corresponds to the ethnohistorically known Colla polity. No positively identified Kekerana sherds were discovered in the Otoro Valley. Tschopik (1946) defined the area of Sillustani distribution as north to Ayaviri and south to Cutimpo. Hyslop's survey of the southwestern side of the lake (1976) indicates that Sillustani ceramics are rarely found in the Lupaca zone, supporting the hypotheses of both Tschopik and Lumbreras and Amat.

Arellano Lopes and Berberian (1981) report Sillustani-related or actual Sillustani ceramics from a site near Lipez in the Potosi puna of Bolivia. A related type is reported by Sanhueza Tapia and Olmos Figueroa from Isuga, in the northern Chil-



can altiplano (1982, p. 207). Both sites have chulpas and other ceramics identifiable as Titicaca Basin traditions. Recent investigations in the Colca Valley north of Arequipa have also discovered ceramic fragments tentatively identified as Sillustani (M. Malpass, pers. comm.). The accumulated evidence to date indicates that the known distribution of Sillustani-related ceramics is extensive throughout the south central Andes and may indicate areas of pre-Inca Colla colonization or exchange in the lower valleys. From this perspective, P-1 is one of many known and possible sites throughout the south central Andes with definable material relationships to the northwestern area of the Titicaca Basin.

The second largest class of decorated, exotic ceramics in Porobaya consists of Inca polychromes or Late Horizon imitations (figs. 201–213, 219). In the Titicaca Basin, Inca imperial styles are generally found with Chuquito polychromes, the probable local Lupaqa Late Horizon ware. Such sites fall into Hyslop's Chucuito and Inca macro-pattern and constitute the Late Horizon occupation of the Basin. This is not the case with Porobaya, however, where Inca imperial styles are not found with Chucuito ones. Such an observation further reinforces the fundamentally pre-Late Horizon date of the Estuquiña settlement system. Recent investigations by Conrad and Rice (1989) at the type site of Estuquiña itself in the mid-Moquegua Valley indicate that there are virtually no Inca ceramics in domestic or nondomestic contexts on the site. In contrast to these predominantly Late Intermediate Period sites, Chucuito polychromes are found in abundance on the large site of Torata Alta as well as the Otoro sites of P-6, P-11, and P-13. These are interpreted as being truly Late Horizon in date, contemporary with Inca geopolitical control of the Moquegua Drainage (Stanish, 1989b).

Two Inca fragments were modified by grinding the neck (figs. 201, 209). These were most likely aryballoids with broken-off necks that were reworked into "neckless" vessels. One complete vessel of an Inca plate is so crudely made that it is most likely a local imitation (fig. 213). The paste is consistent with locally manufactured ceramics in the region.

Several Gentilar fragments and one whole funerary vessel were also discovered in the excavations (figs. 214–218, 220). Hidalgo Lehuéde et al. (1982, p. 86) have dated this style to approximately A.D. 1350, a date that is about 100 yr earlier than the one C-14 date from Porobaya (A.D.

1446 ± 90 calibrated-Teldyne) and other sites in the Moquegua Valley (Rice et al., 1989). The Gentilar pottery has decorative motifs characterized by geometric designs painted in red and black over bright red slips. The most frequent elements are spirals and parallel or stepped lines (Lumbreras, 1974b, p. 211). These ceramics correspond to the earlier Arica II style of Bird (1943). The main distribution of Gentilar ceramics seems to parallel that of the earlier San Miguel styles. Gentilar ceramics are found throughout northern Chile and the archaeological museum in Tacna displays several tomb lot excavations in which Gentilar and Inca ceramics are apparently found together.

Like the Sillustani ceramics, there appear to be both pre-Inca and Late Horizon styles in the Gentilar type, although this proposition is based largely on stylistic criteria and remains hypothetical. Figures 216 and 217 are examples of a possible pre-Inca Gentilar vessel fragment. All of the fragments in Figures 216 and 217 were found in the same excavation context and probably belong to the same vessel. The vessel has a semicompact, red (2.5 YR 5/8) paste. It is sand tempered. The exterior is burnished and decorated with a black and white paint over a deep red slip. The interior is also burnished and is a dark gray or black over red. The distinctive dots, on both the interior and exterior, are cream colored with a small red dot in the center.

Other Gentilar styles show unmistakable Inca (or perhaps Titicaca Basin?) influence with more intense, varied colors and interior rim triangles. This subtype of Gentilar has been found in association with Inca ceramics near Tacna (National Institute of Culture, Tacna) and would appear to be a Late Horizon local tradition (Lumbreras, pers. comm.). Figure 220 represents this type of Gentilar vessel found in a tomb in Porobaya (P-1).

Gentilar ceramics are later than San Miguel. The center of Gentilar manufacturing was most likely the Arica–Tacna area. Gentilar fragments are most commonly reported from funerary contexts in northern Chile (Dauelsberg, 1969; Focacci, 1982) and are also common in the extreme southern Peruvian valleys. They are associated with the post-Tiwanaku settlements in these valleys and represent a vigorous local cultural development. At the type site of Estuquiña in the mid-Moquegua Valley, Gentilar vessels in funerary contexts are the most common exotic ceramic style (Rice & Conrad, pers. comm.). Gentilar vessels have not been reported from the Titicaca Basin to date. The maximum distribution of this style appears to be re-

stricted to the coastal drainages between the Río Tambo in the north to perhaps the Quebrada de Camarones in the south.

Isabel Flores and Jesus Gordillo (pers. comm.) have conducted a number of important excavations in the Tacna area. Their data suggest that the sequence in northern Chile corresponds well with the archaeological materials found in the Tacna area. My own observations would suggest that the two areas are very similar and constitute an integrated political and economic region throughout much of the later prehistory of the south central Andes.

The largest class of decorated ceramics on the Estuquiña-Inca period is characterized by a local polychrome that I have called Porobaya Tricolor (figs. 221–248). This polychrome is characterized by a red burnished slip with black and fugitive white linear decorations that almost always run vertically from the neck or handle. Most of these decorated vessels are jars, although an occasional bowl has similar designs (fig. 231). Decorated vessel pastes are semicompact in hardness and are usually tempered with fine to medium sand, quartz, and occasional black or yellow mica. Paste colors range from light reddish brown (5 YR 6/4) to yellowish red (5 YR 5/6).

This local example of Tricolor del Sur ceramics has certain design similarities to Allita Amaya polychrome in execution, but the decorations on the four vessels illustrated by Tschopik (1946, p. 34) are considerably more elaborate than those found at Porobaya. The surface treatment and paste characteristics of the Porobaya Tricolor type are virtually identical to the red-slipped jars and bowls in the Estuquiña-Inca Period. The Porobaya Tricolor is therefore most likely the decorated variety of the plainware assemblage.

The Moquegua region has been hypothesized to be an area of pre-Inca colonization by Titicaca Basin polities (Murra, 1968). In another publication, I have argued that the Estuquiña and Estuquiña-Inca period sites are not colonies of external polities, but rather autonomous settlements engaged in intensive exchange (Stanish, 1989b). The existence of the Porobaya Tricolor ceramic type provides supporting evidence for this proposition. Plainware ceramics on Porobaya show little similarity to published Titicaca Basin styles and greater affinities to contemporary coastal assemblages. Of the 12 contemporary Allita Amaya plainware shapes illustrated by Tschopik (1946, p. 35), only the olla (*ibid.*, fig. 21-a) and possibly the jar and bowl (*ibid.*, fig. 21-f,k) are found in Estuquiña Pe-

riod sites. These plainware forms are found throughout the region and most likely represent some type of functional, not cultural, variation. As with the Allita Amaya ceramics, however, the Porobaya polychromes are essentially decorated plainwares.

The two most common plainware types recognized on the site—bootpots and Estuquiña bowls (figs. 252–277)—are rarely reported from the Titicaca Basin but are commonly found in other Tricolor del Sur cultures such as Chiribaya and Churajon. Estuquiña bowls (burnished bowls with opposing rim protuberances) have only been reported from one circum-Titicaca Basin site excavated by Rydén in Bolivia. This site, called Markopata, contains several bowl fragments with the characteristic rim protuberances (1957, p. 82, fig. 61-l, p. 84, fig. 62-d, p. 91, fig. 65-M,i). These fragments were a very small part of the overall assemblage and may, in fact, have been imports.

Estuquiña bowls are characterized by a very distinctive and variable rim protuberance or lug on the exterior rim of the bowl. Almost always, there are two lugs placed directly opposite each other. Paste color varies. Approximately 60% of the pastes of the Estuquiña bowls from the Porobaya and Sajena sample ( $N = 53$ ) were brown to reddish brown (7.5 YR 5/6–5 YR 5/4) in color. The rest of the sample included yellow-red (5 YR 5/6), pinkish gray (5 YR 6/2), weak red (10 R 4/4), and dark gray (5 YR 4/1) pastes.

Estuquiña bowls are commonly found in the Moquegua Valley, on numerous sites near Tacna (National Institute of Culture, Tacna), in Ilo associated with Chiribaya sites (Museo de Algorrobal), and very commonly in Arequipa associated with Churajon sites (Linares, pers. comm.). Both bootpots and Estuquiña bowls are found on Chiribaya sites (including P-4) that are earlier than P-1. The greatest density of these two vessel types, however, occurs on the sites contemporary with the Estuquiña and/or Estuquiña-Inca Periods.

The second major plainware type is the bootpot. Bootpots vary widely in form (figs. 269–277). The majority of bootpots have a distinctive pinkish paste (5 YR 7/4), although several vary between lighter and darker hues. They are tempered with fine to medium sand. Surface treatment is uniformly characterized by a poorly burnished technique, with burnishing marks (probably made with a pebble) very evident. All but a few bootpots are heavily carbonized from postfiring use. Bootpots are generally undecorated, but a few have light red interior lip bands. One example (not shown) has



a light reddish brown paint casually executed on the exterior surface.

In the Estuquiña-Inca Period, a number of plainware vessels shapes are found (figs. 278–296). These include cups, jars, ollas, and a miniature bootpot (fig. 292).

### Inca Period

Two sites in the Otorá Valley are definitely Late Horizon in date: P-11 and P-13. The site of P-13 is one of only a few examples of a Late Horizon local site yet discovered in the Moquegua Drainage. It has about one dozen structures, built on an undefended location below Sajena or P-3. It is significant that on this very small site, more Inca sherds were found than on all of the Estuquiña-Inca Period sites combined. In contrast, P-11 has been largely destroyed by modern campesino housing. It is located on the north side of the Río Otorá. Disturbed midden deposits can be found along the edge of the site.

Figures 298–308 represent the fragments found on the sites of P-11 and P-13. A number of decorated pieces are typical Inca wares, characterized by fern patterns, aryballoid shapes, and thick-lipped, shallow bowls. Many of these types are described by Julien (1983) and Rowe (1944) and the description will not be repeated here.

### Summary and Conclusions

The sequence in Otorá represents approximately 600 yr of cultural history in the upper sierra of the Moquegua Drainage. The processes whereby sites are rapidly settled and abandoned provide us an opportunity to develop a fine-tuned ceramic chronology with a large sample. In spite of the huge sample of ceramic fragments (more than 10,000), a very small fraction are decorated (approximately 1%). These decorated pieces, along with complete vessels from tombs and vessel reconstructions from fragments, provide us with an excellent ceramic data base for the post-Tiwanaku periods.

With one exception, the decorated types identified in the Otorá Valley are imported. Most of these exotic types can be correlated to established chronologies in either the Titicaca Basin or Chile. Recent work in Moquegua by members of Programa Contisuyu also provides comparative data.

The earliest ceramic assemblage in the Otorá Valley is associated with the Tumilaca Period, a cultural phase characterized by a post-Tiwanaku political entity with very strong ties to the previous Tiwanaku 5 occupation of the region. These ceramics are characterized by the use of Tiwanaku motifs on locally manufactured vessels. The subsequent period (Otorá) is characterized by two colonies of external polities (Chiribaya and Titicaca Basin, possibly Colla) and a local settlement. The exotic ceramic materials recovered on the sites represent these distinct cultures (San Miguel, Chiribaya, Colla). In the following two periods, known as Estuquiña and Estuquiña-Inca, all of these former types disappear and are replaced with Sillustani, Gentilar, Inca, and a local polychrome known as Porobaya Tricolor. The final pre-Hispanic phase is represented by an Inca occupation. The ceramic styles reflect this political change; Inca and imitation Inca vessels are found in the valley.

Along with these exotic wares, this research has been able to isolate the phases in which several important utilitarian and plainware types developed. Bootpots are very common in the Moquegua Drainage. They appear in small numbers in the Otorá Period and are found in abundance in the Estuquiña-Inca Period. The Estuquiña bowl seems to parallel this pattern as well, with a few examples found in the Otorá and Estuquiña periods and a dramatic increase in frequency in the Estuquiña-Inca period. It is important to note that there are sampling problems with conclusions about the bootpots because of the difficulty of recovering whole or reconstructable vessels on non-Estuquiña Period sites (lack of tombs).

Several patterns are suggested by these data from the Otorá Period sites. Bowl forms from P-7 would suggest an evolution from concave walls (as in keros) to convex profiles in the Otorá Period, a pattern that continues in the later Estuquiña and Estuquiña-Inca periods with the red-slipped, well-burnished bowls. Also, a gradual thickening of the lip from the Tumilaca Period through the Estuquiña-Inca is suggested. Finally, the same gross distinction between well-burnished, red- or orange-slipped treatments of serving and water storage vessels versus unpigmented, wiped or rough surface cooking pots found at P-5 was apparently carried on into the Otorá Period site of P-7.

One of the most important observations from the Otorá data is the preponderance of Sillustani series ceramics on the Estuquiña-Inca sites. This contrasts with the site of Estuquiña in the mid-Moquegua Valley, which has much less Sillustani

and more Gentilar (Conrad & Rice, 1989). The differential occurrence of these two types may simply be a function of geography: the Otor Valley is closer to the Titicaca Basin while the site of Estuquiña is closer to the coastal areas of Azapa. On the other hand, Estuquiña and Porobaya are close to each other and the distribution of these exotic ceramic styles may, in fact, represent a substantial difference in regional economic exchange systems. This proposition remains to be tested with future research.

As a final note, this ceramic chronology focused exclusively on decorated vessels and shape. Additional research on paste types, relative quantities of ceramic types per period, and manufacturing techniques will serve to refine the ceramic chronology for the late pre-Hispanic periods in the Moquegua sierra.

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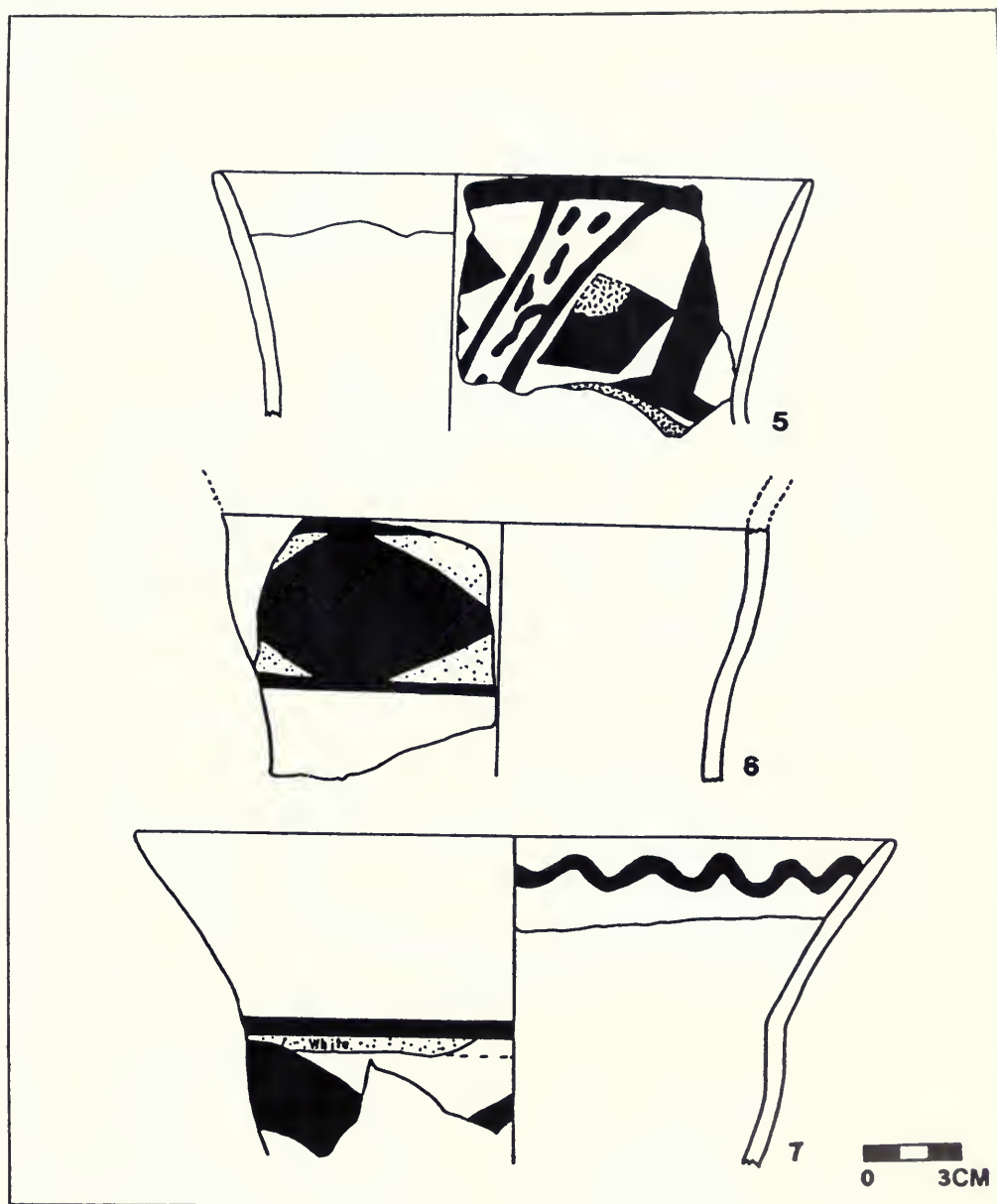
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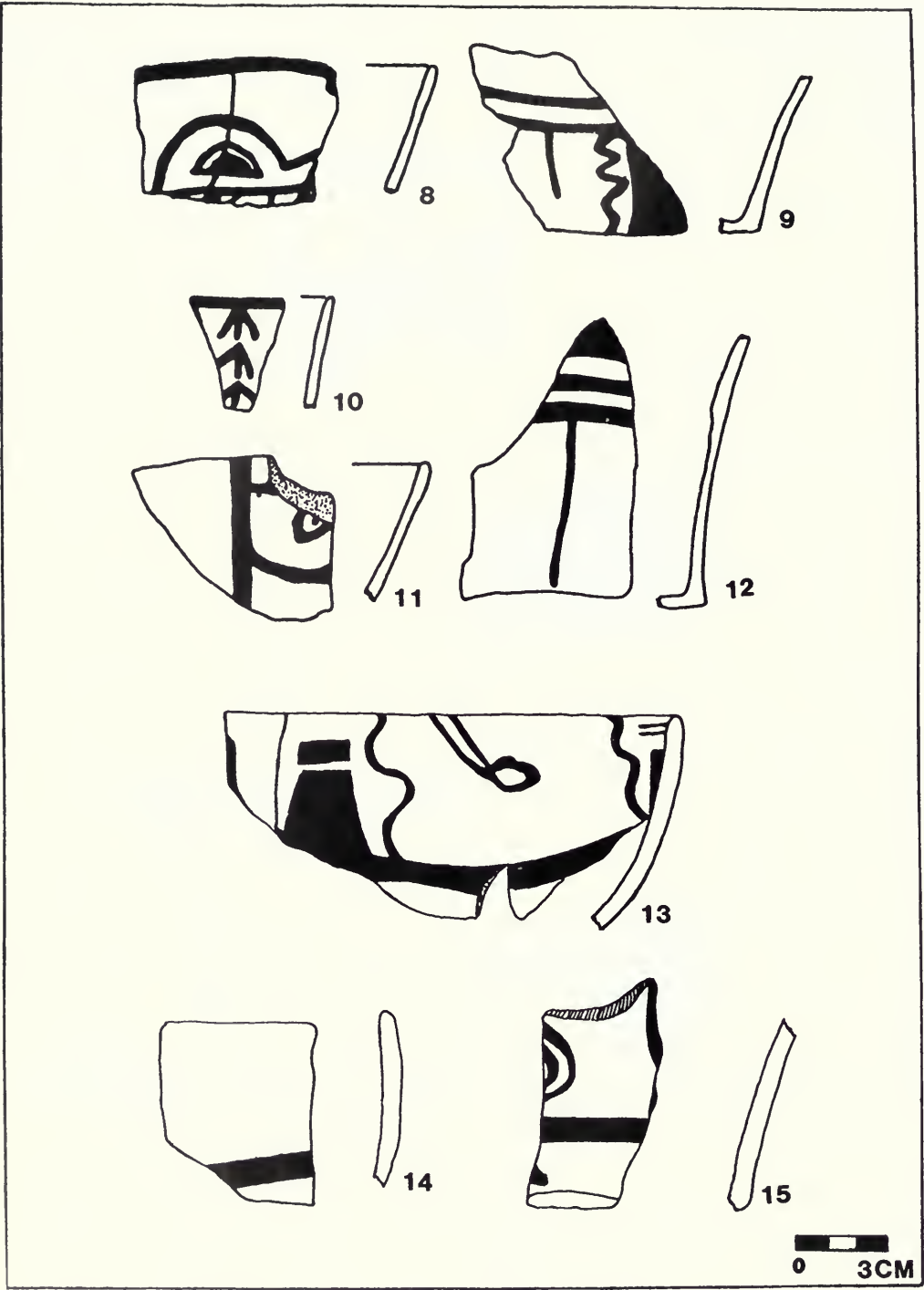
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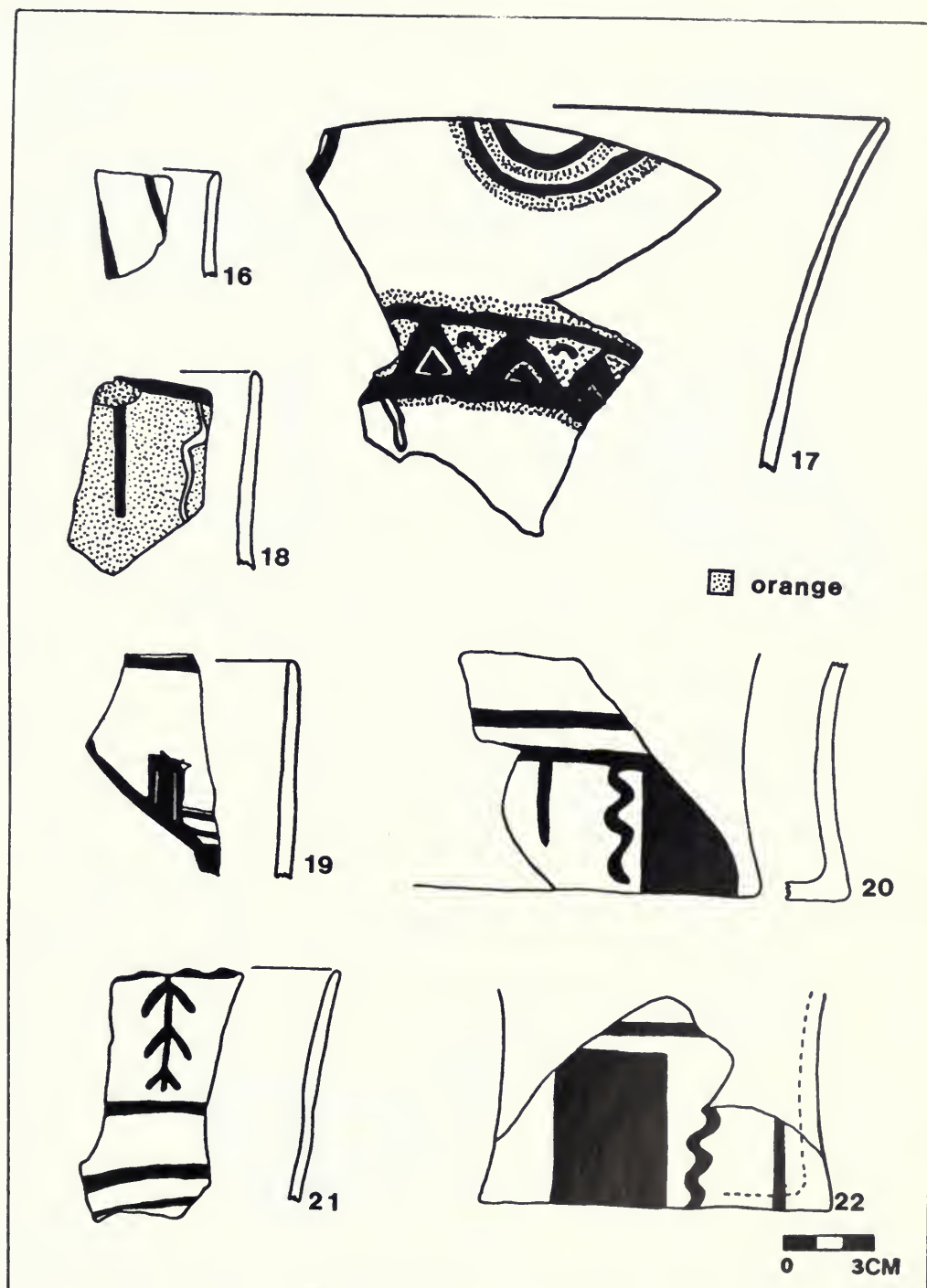
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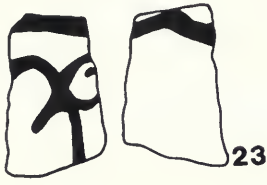
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*Following pages:* FIGS. 5-308. Ceramic illustrations from the Otoro Valley.









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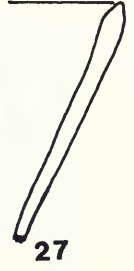
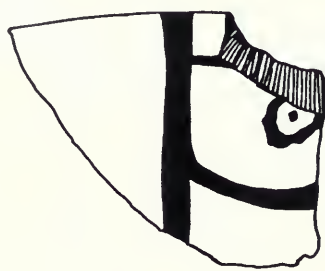
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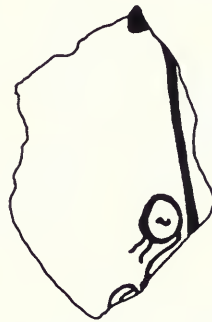
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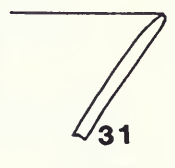
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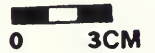
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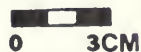
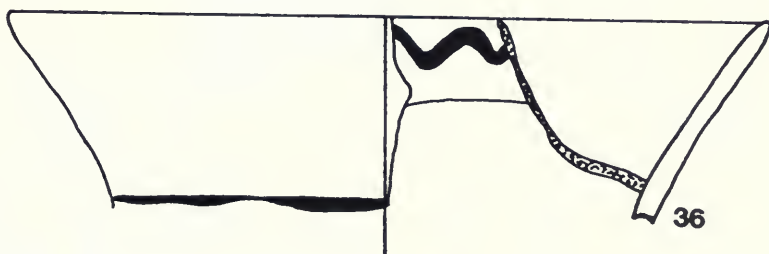
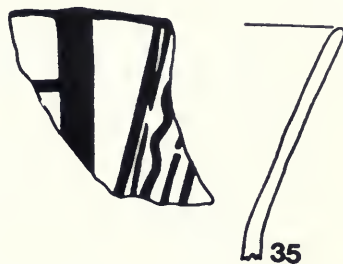
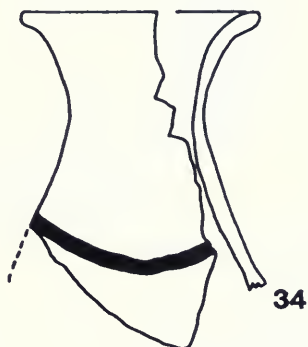
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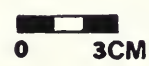
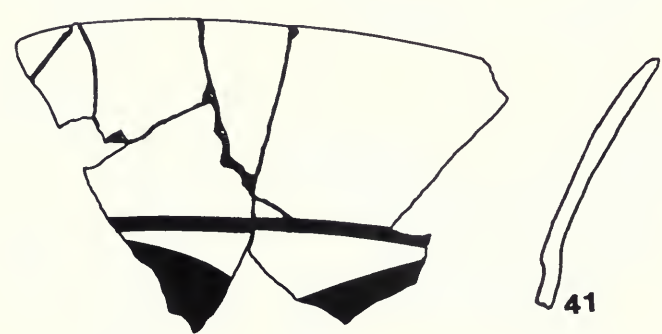
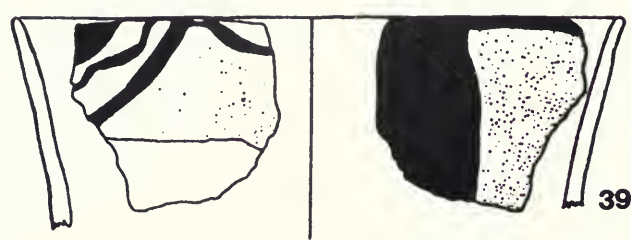


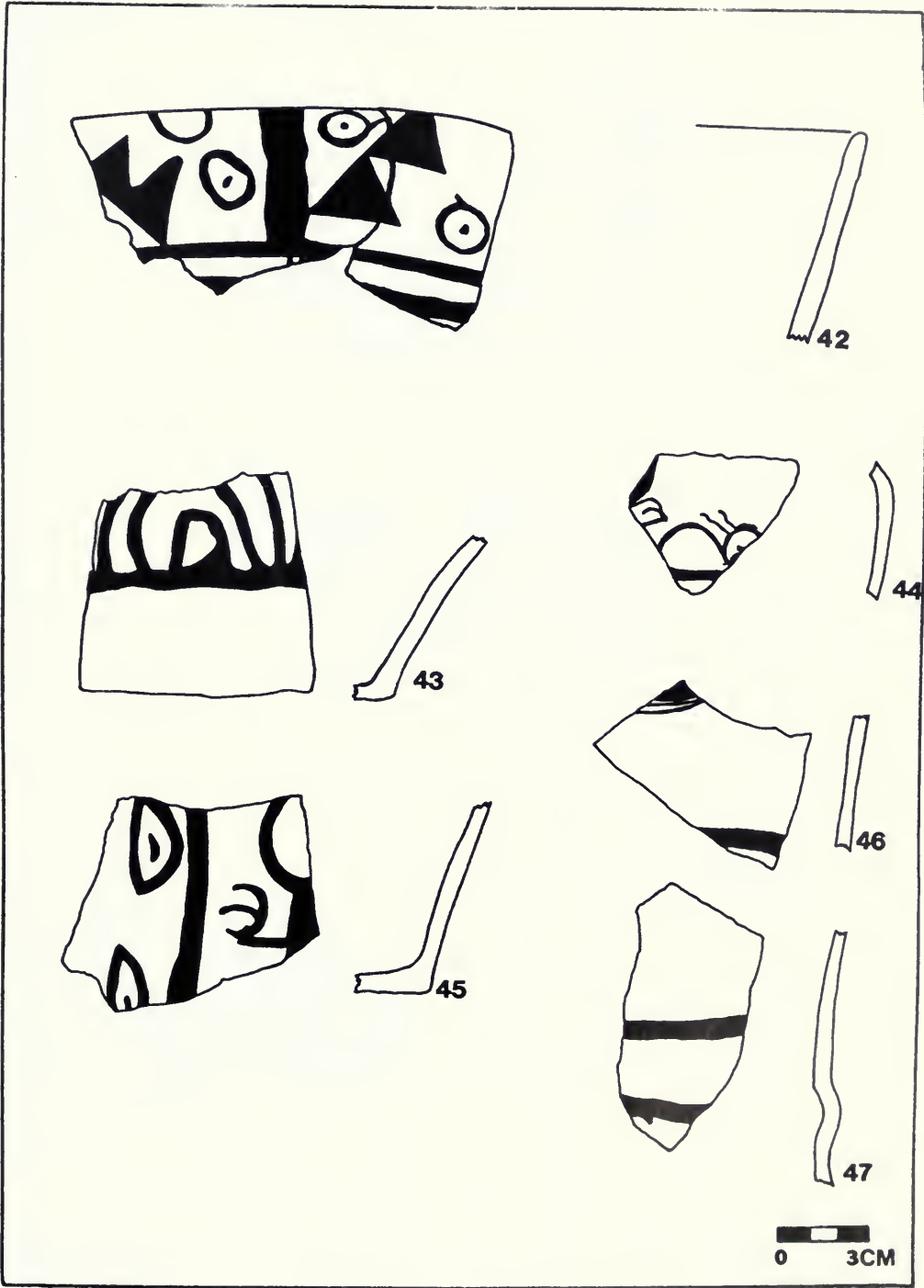
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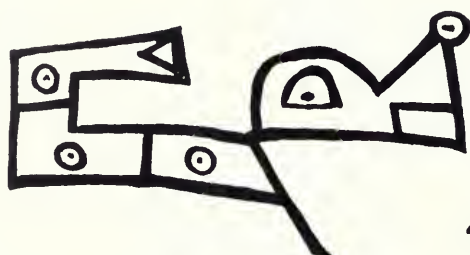








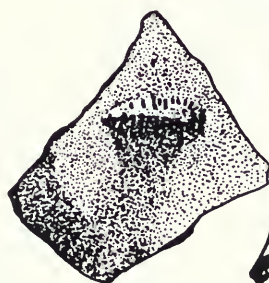




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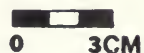
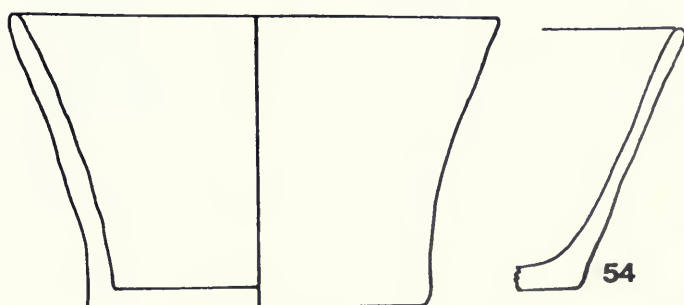
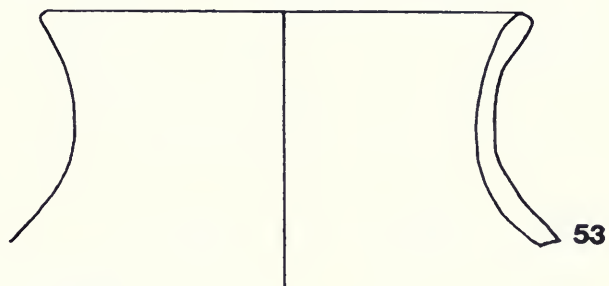
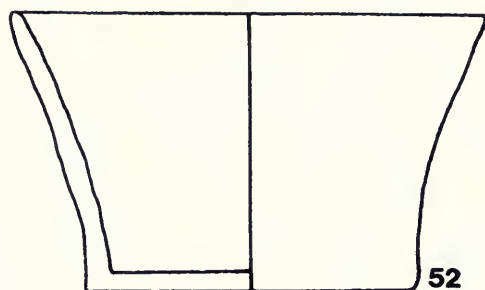
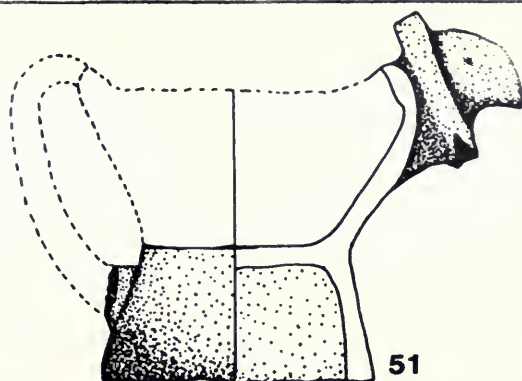


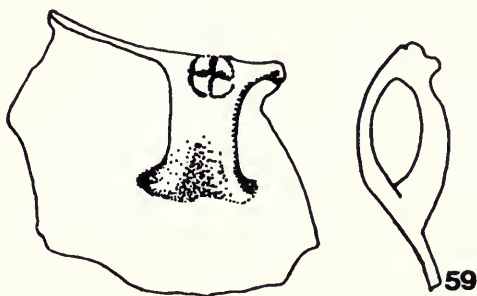
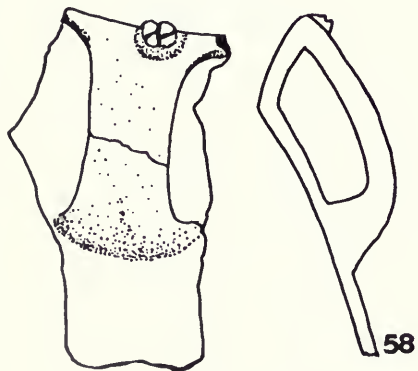
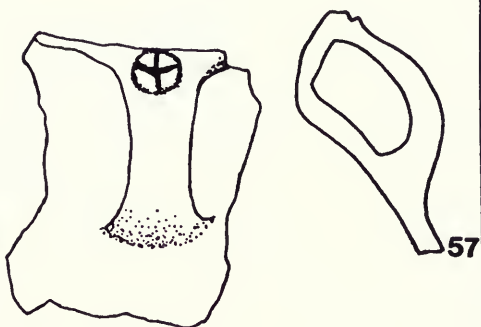
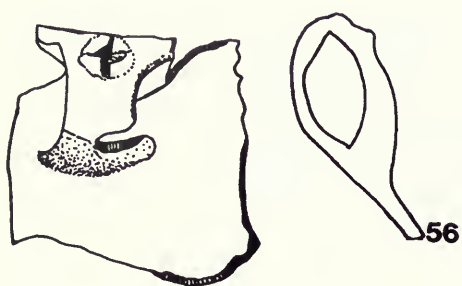
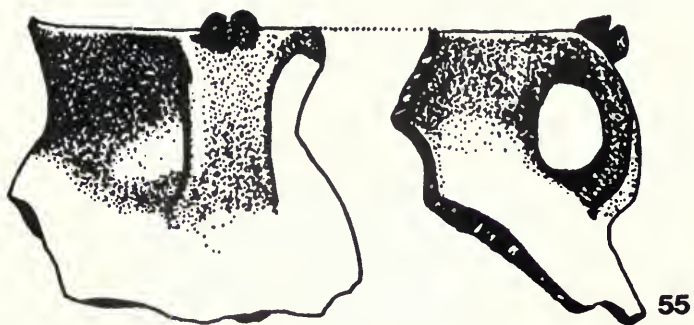
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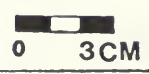
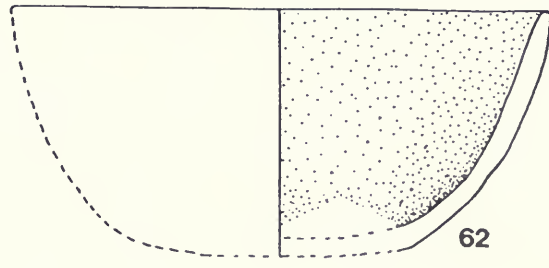
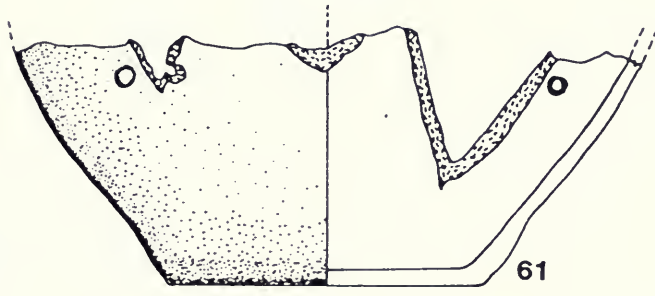
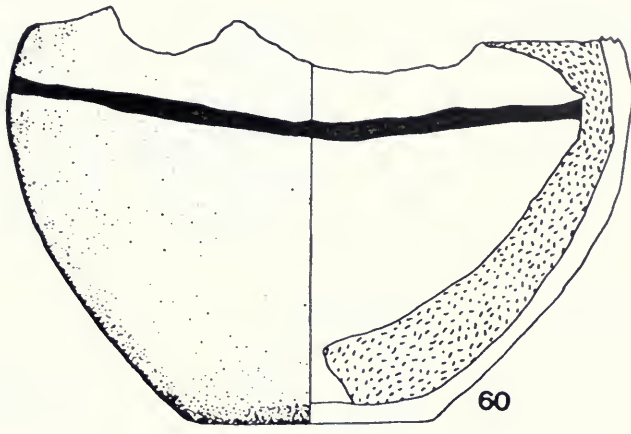


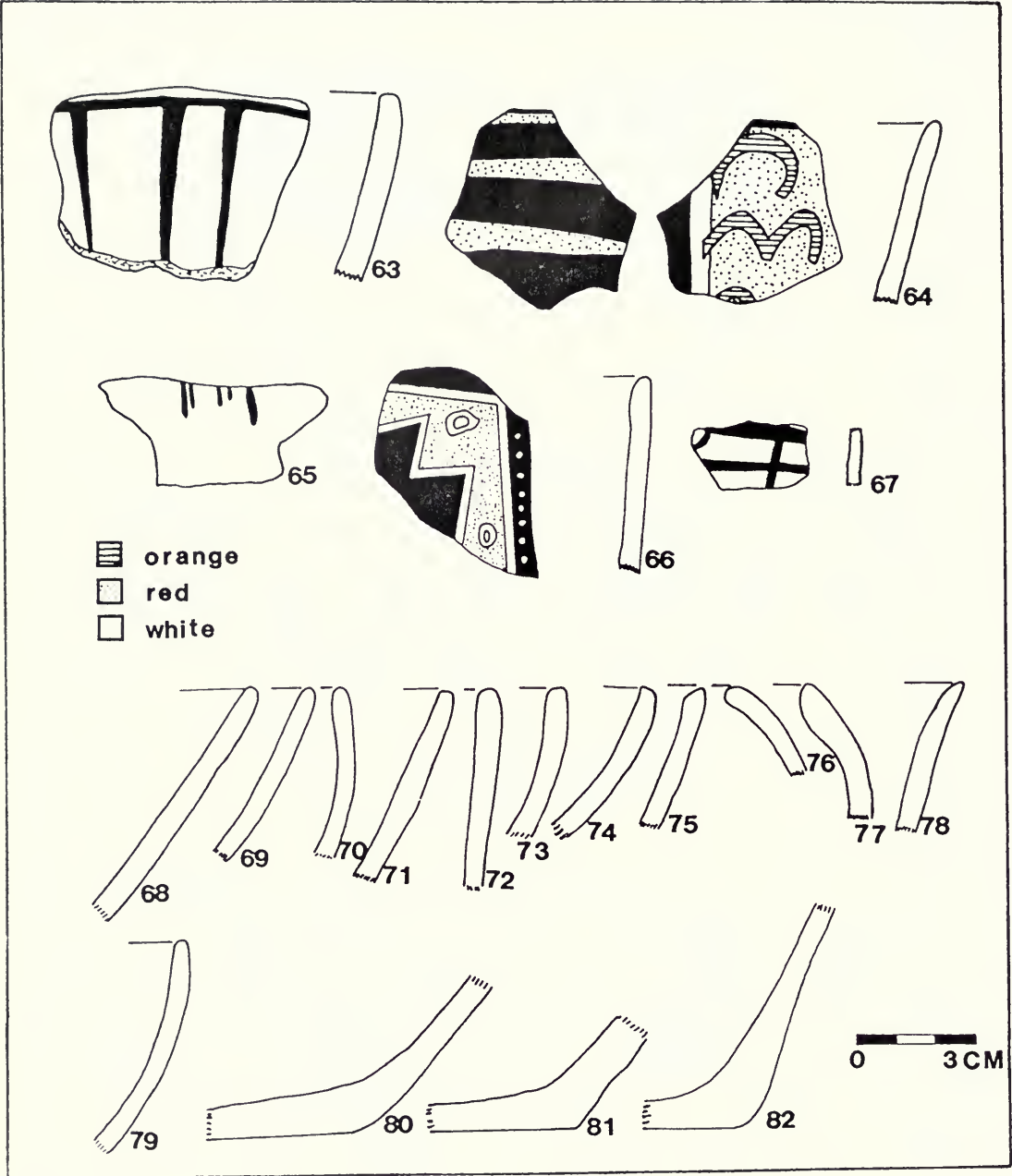
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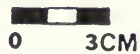
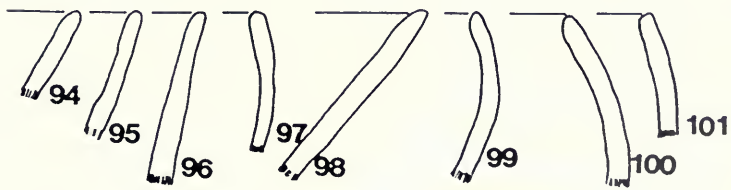
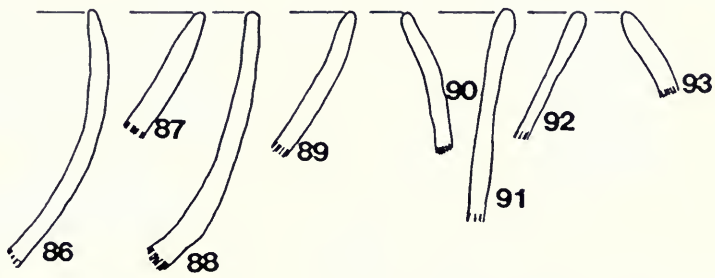
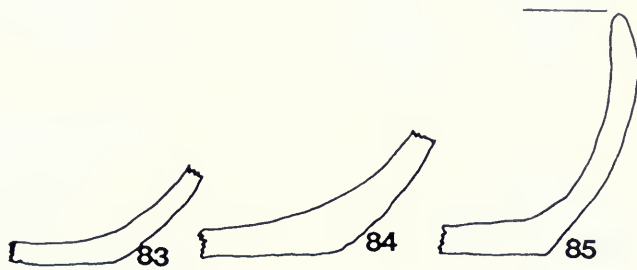


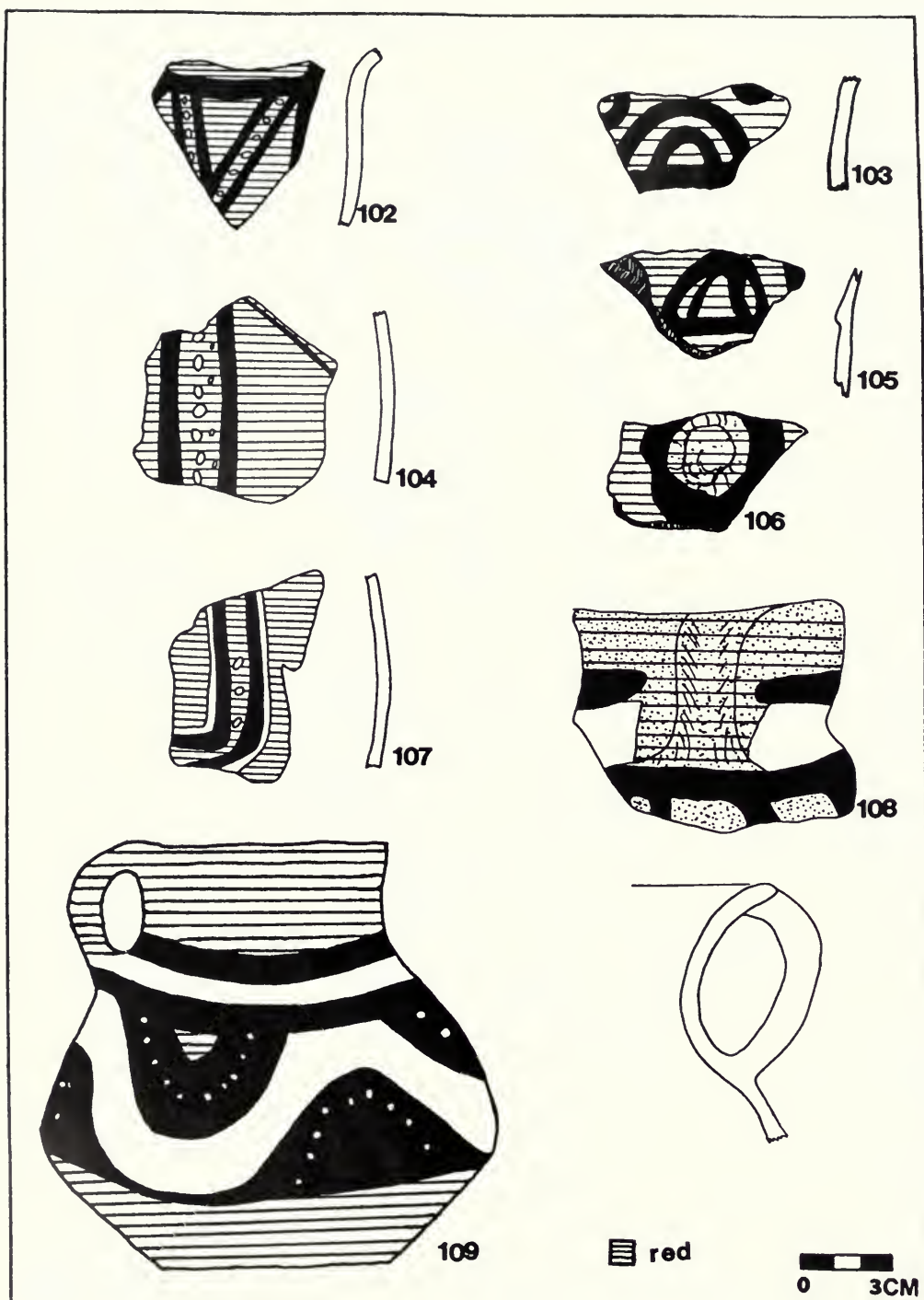


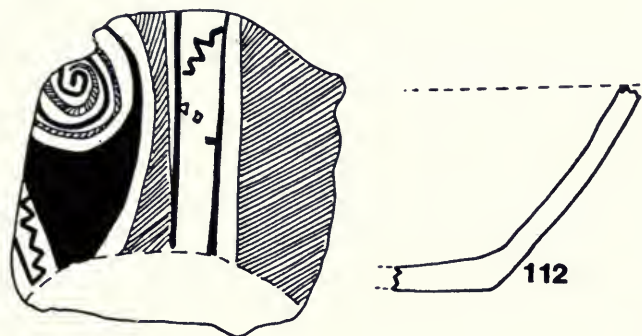




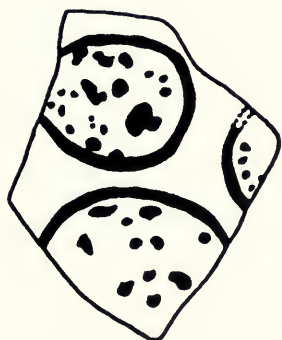





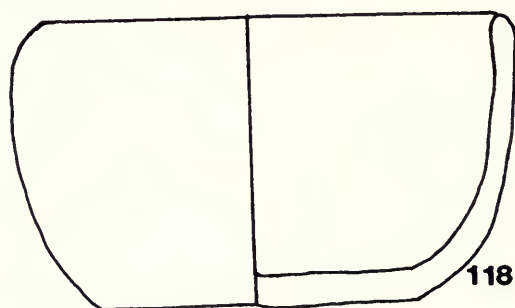
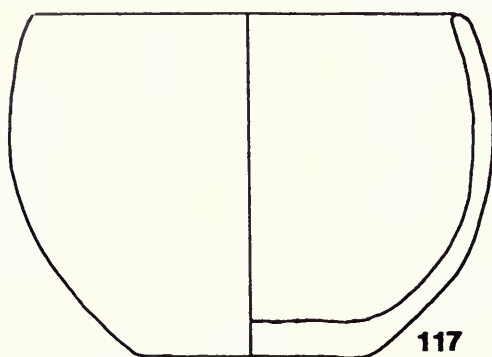
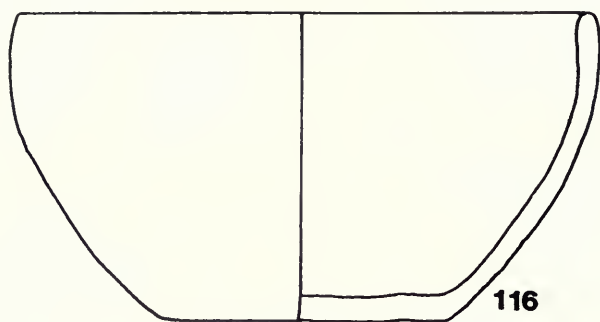


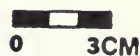
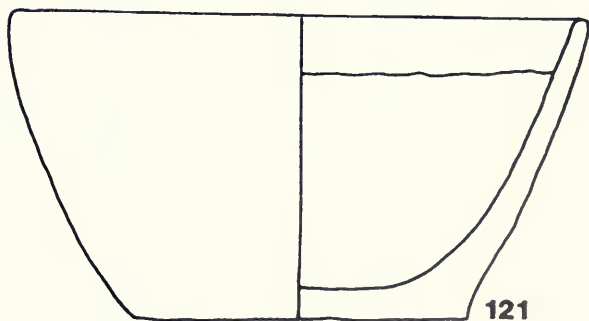
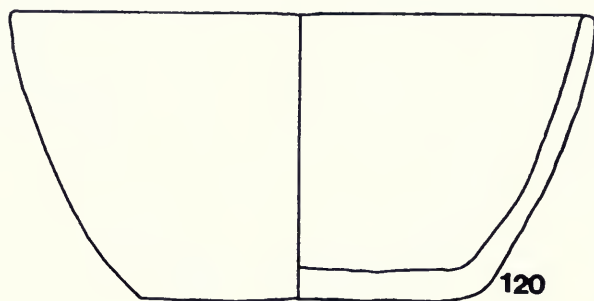
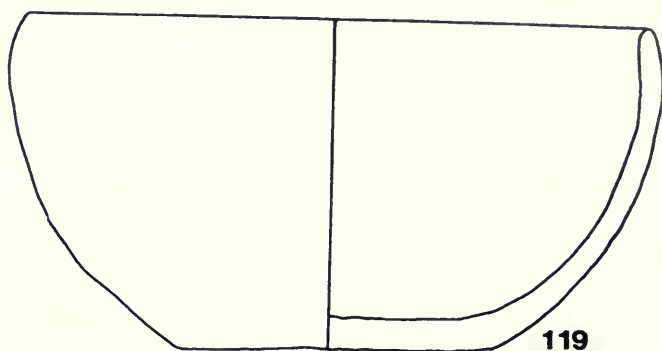


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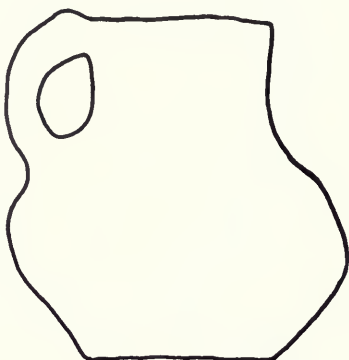
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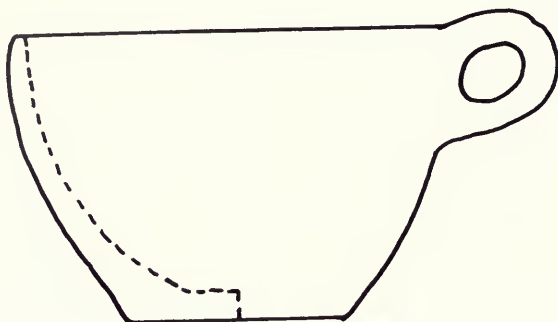




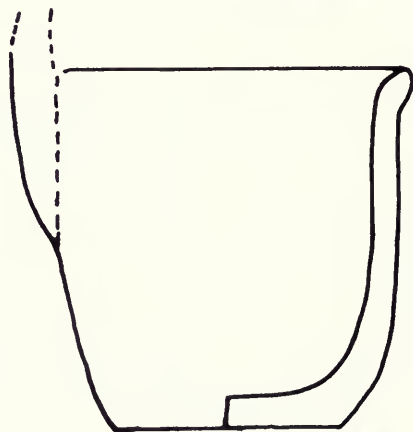
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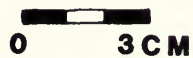
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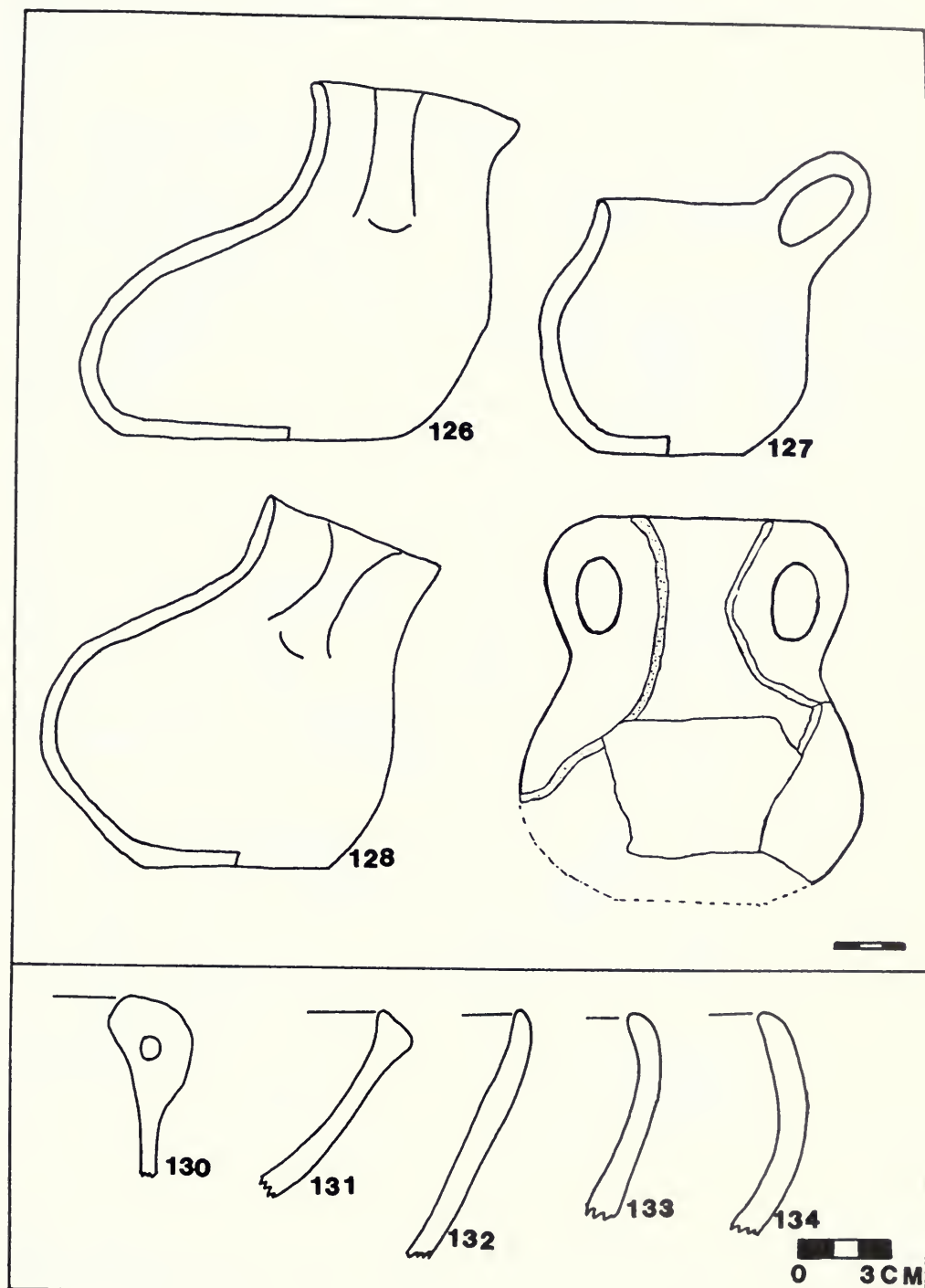


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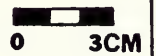
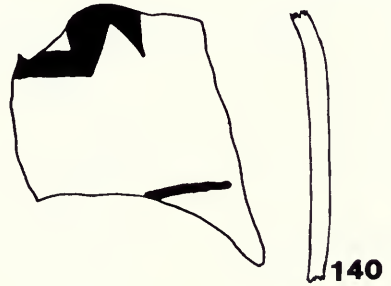
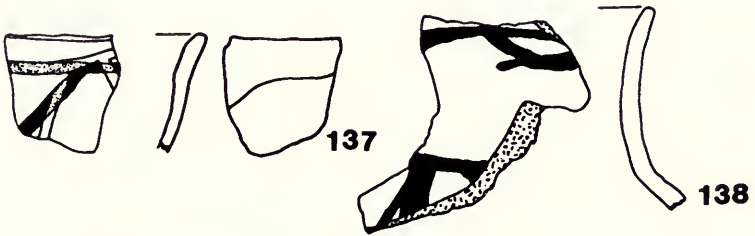
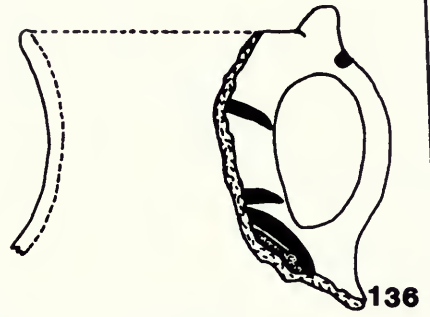
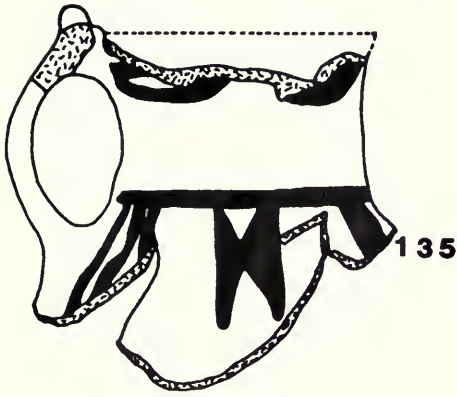


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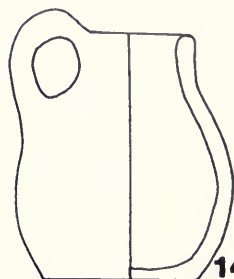




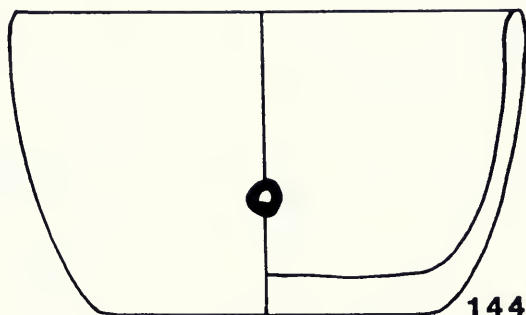




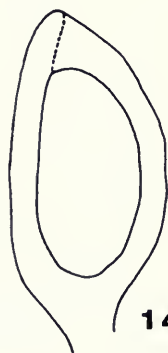
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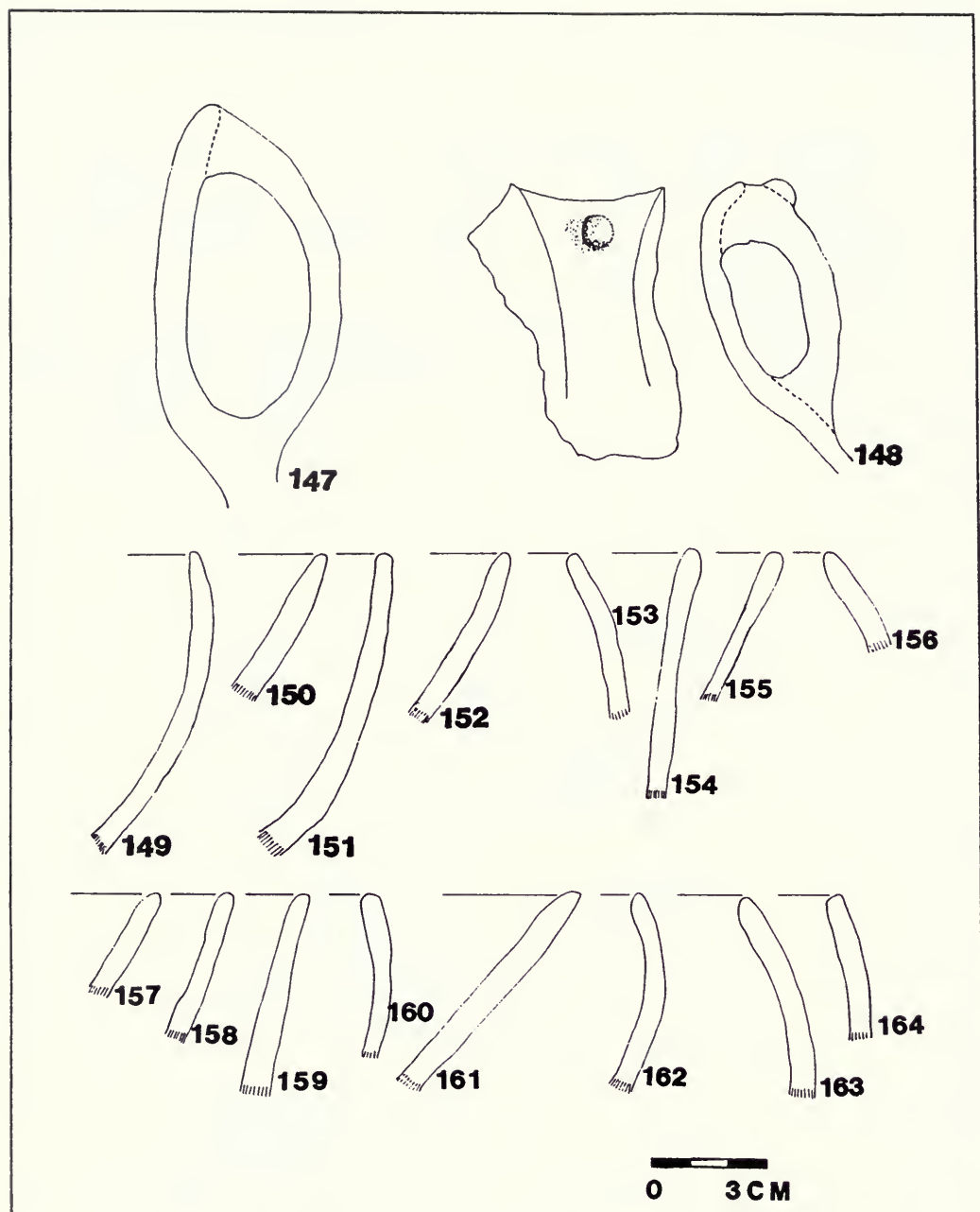


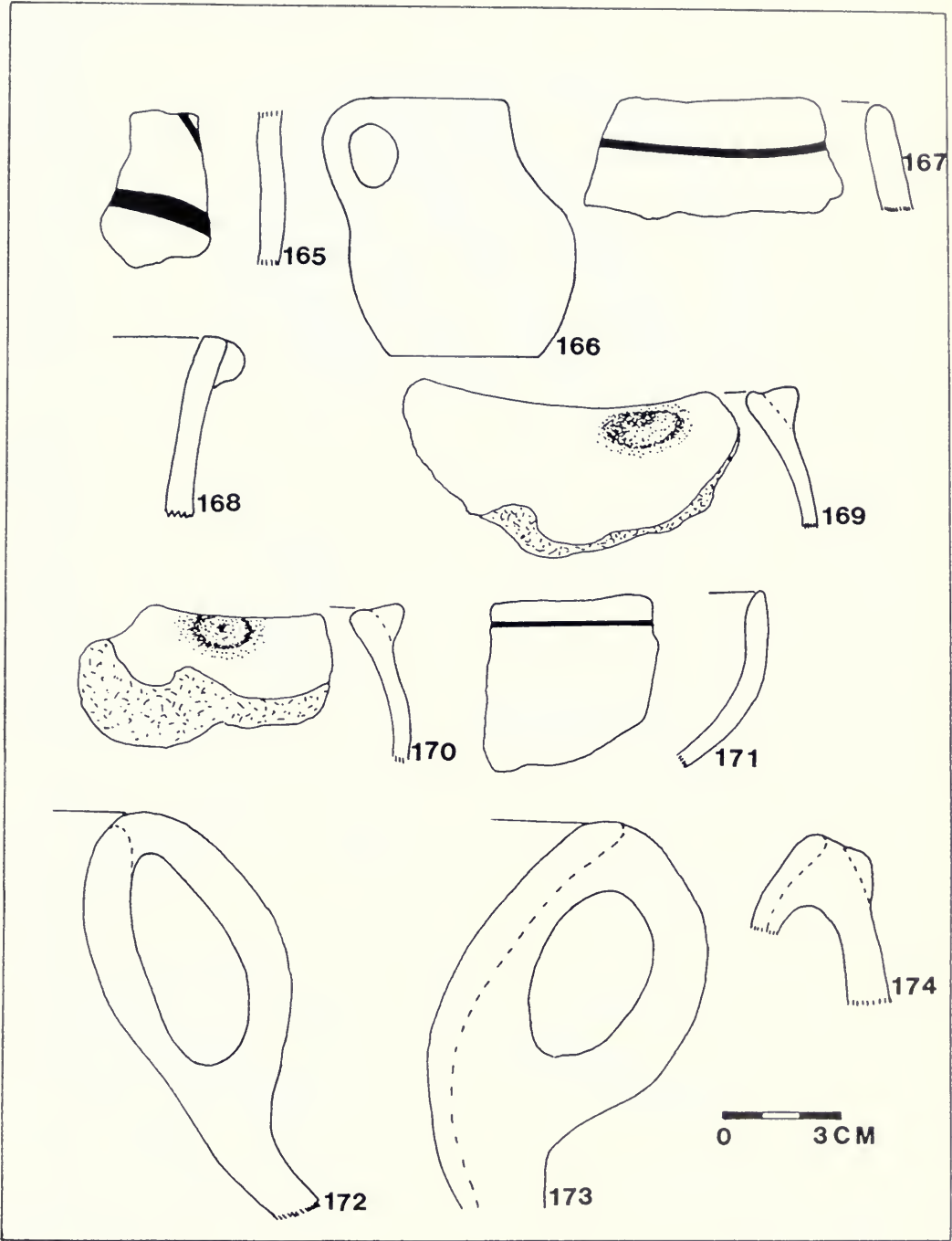
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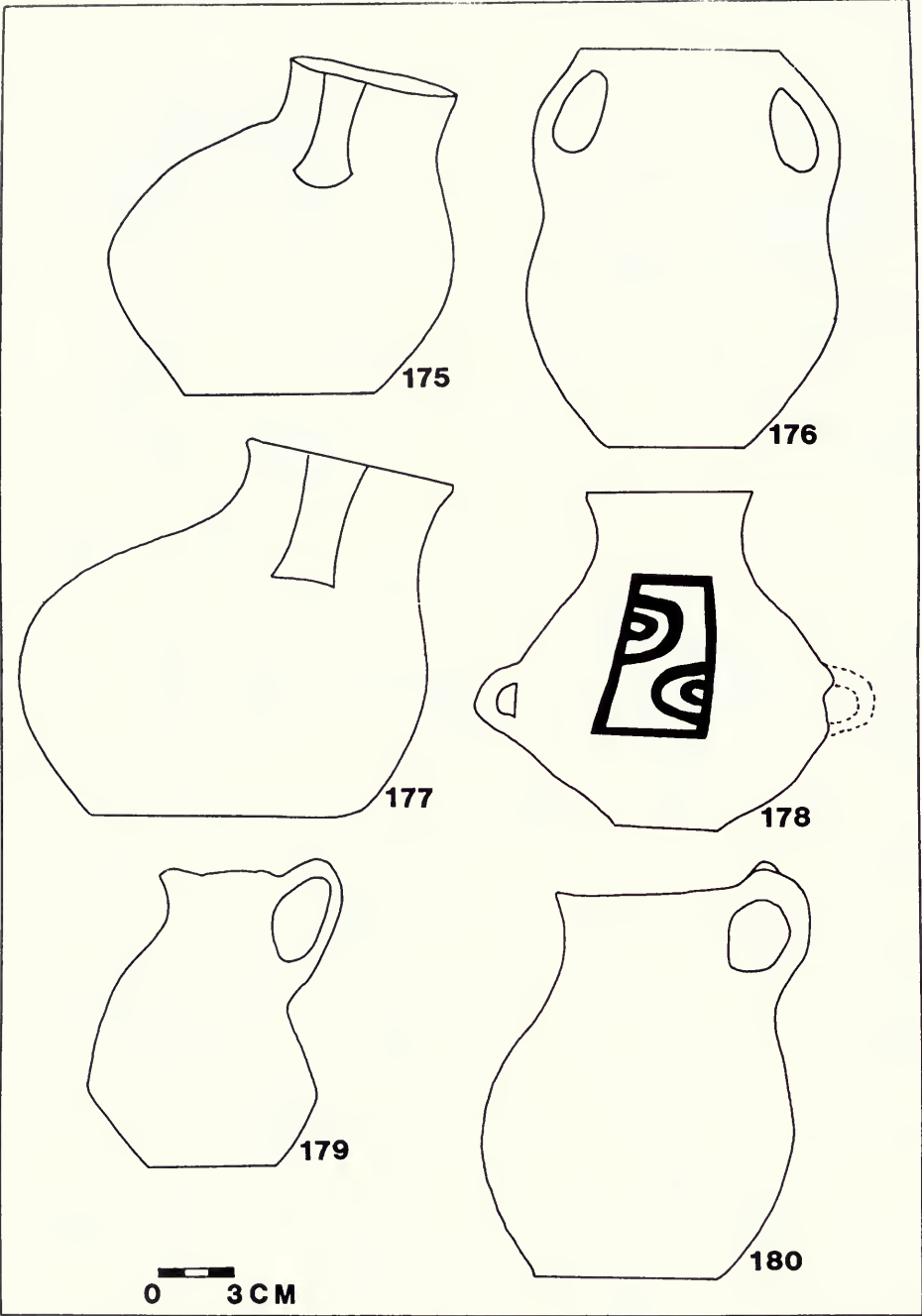


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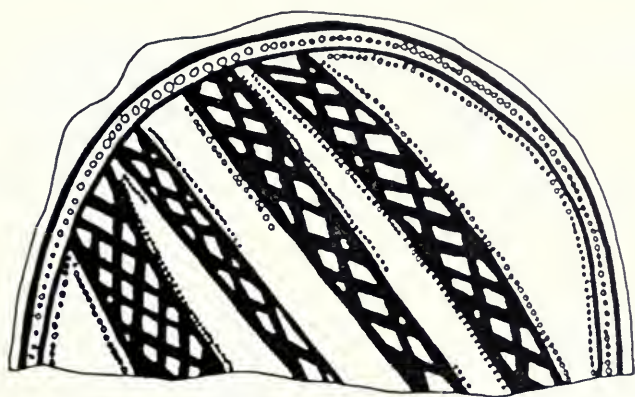




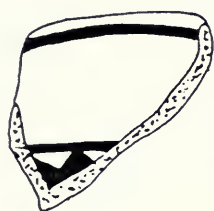




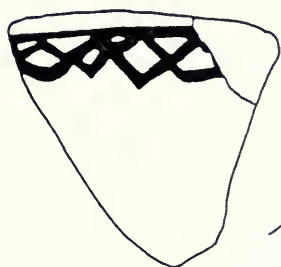




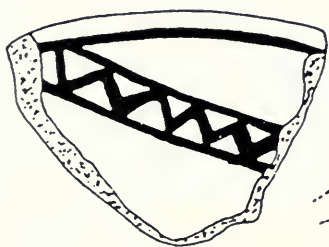
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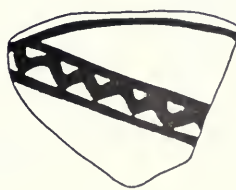
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183

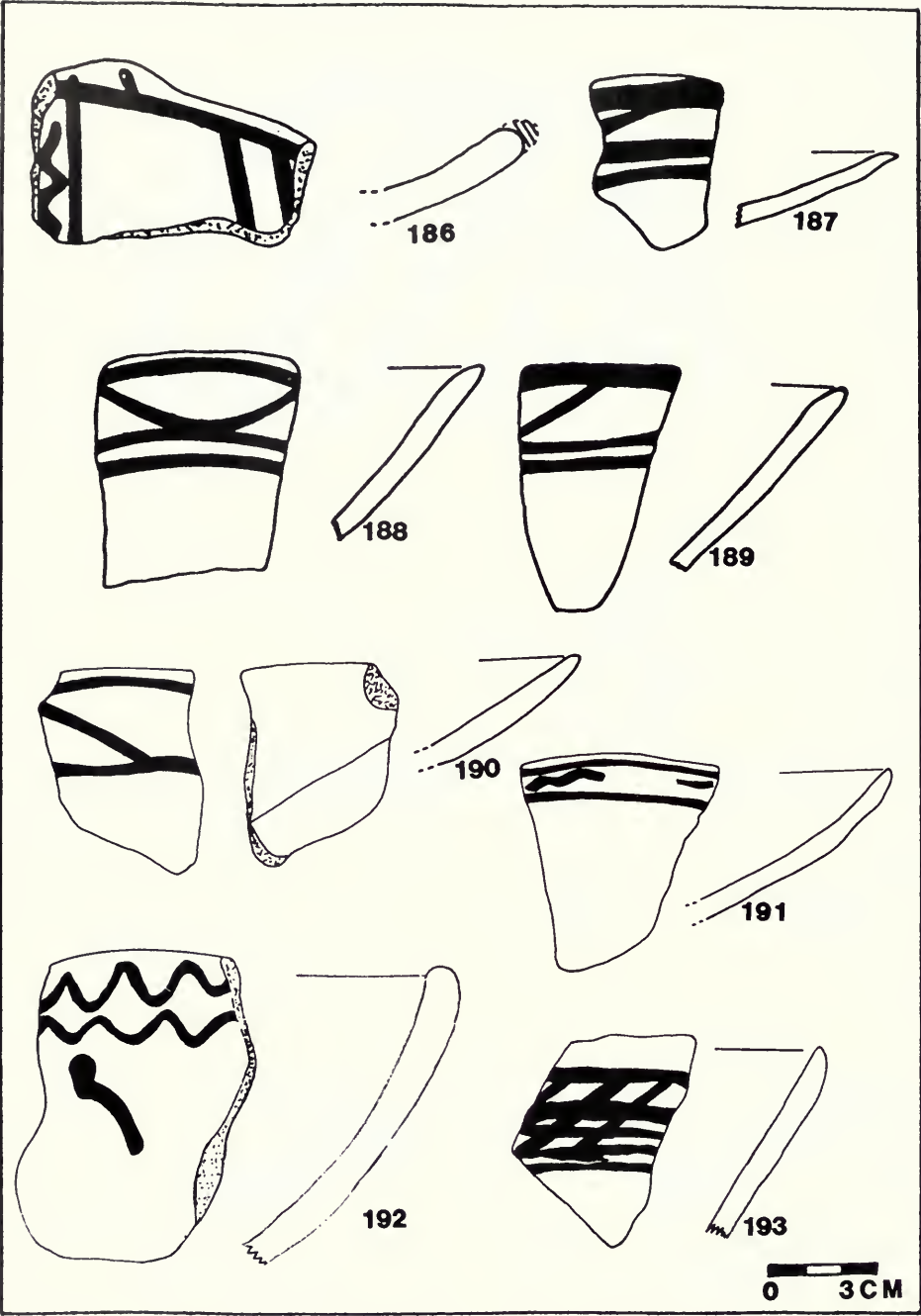


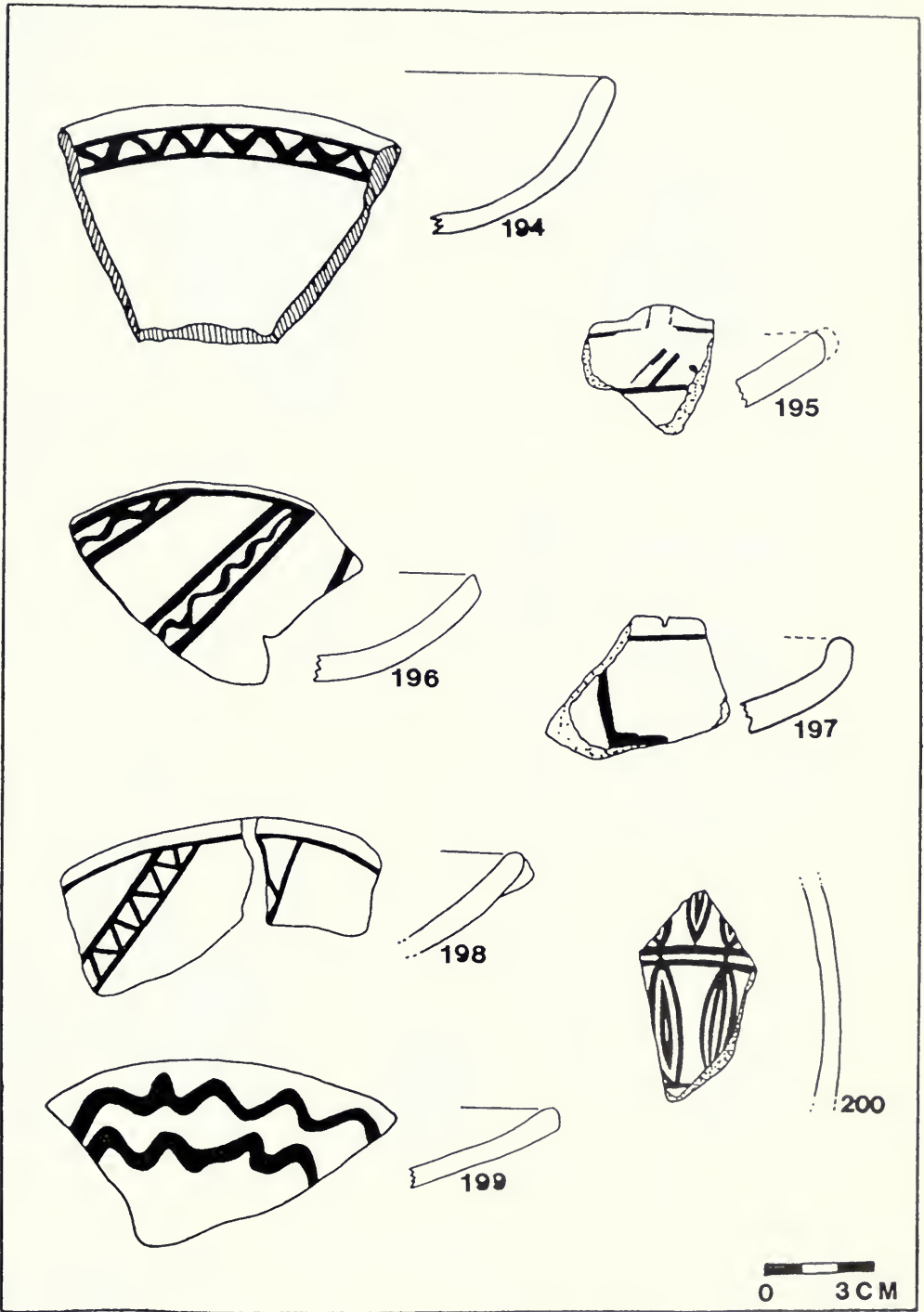
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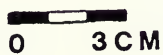
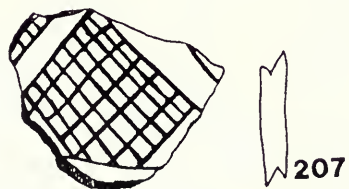
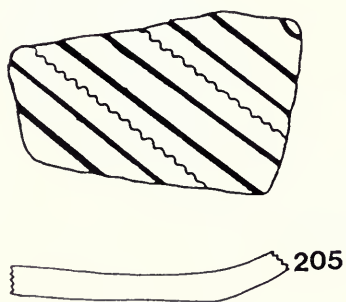
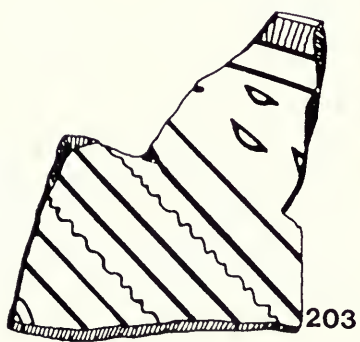
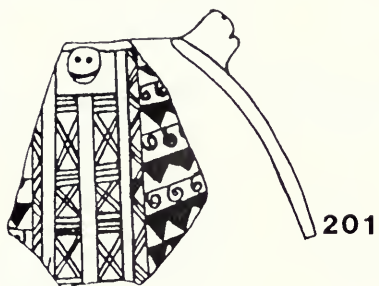


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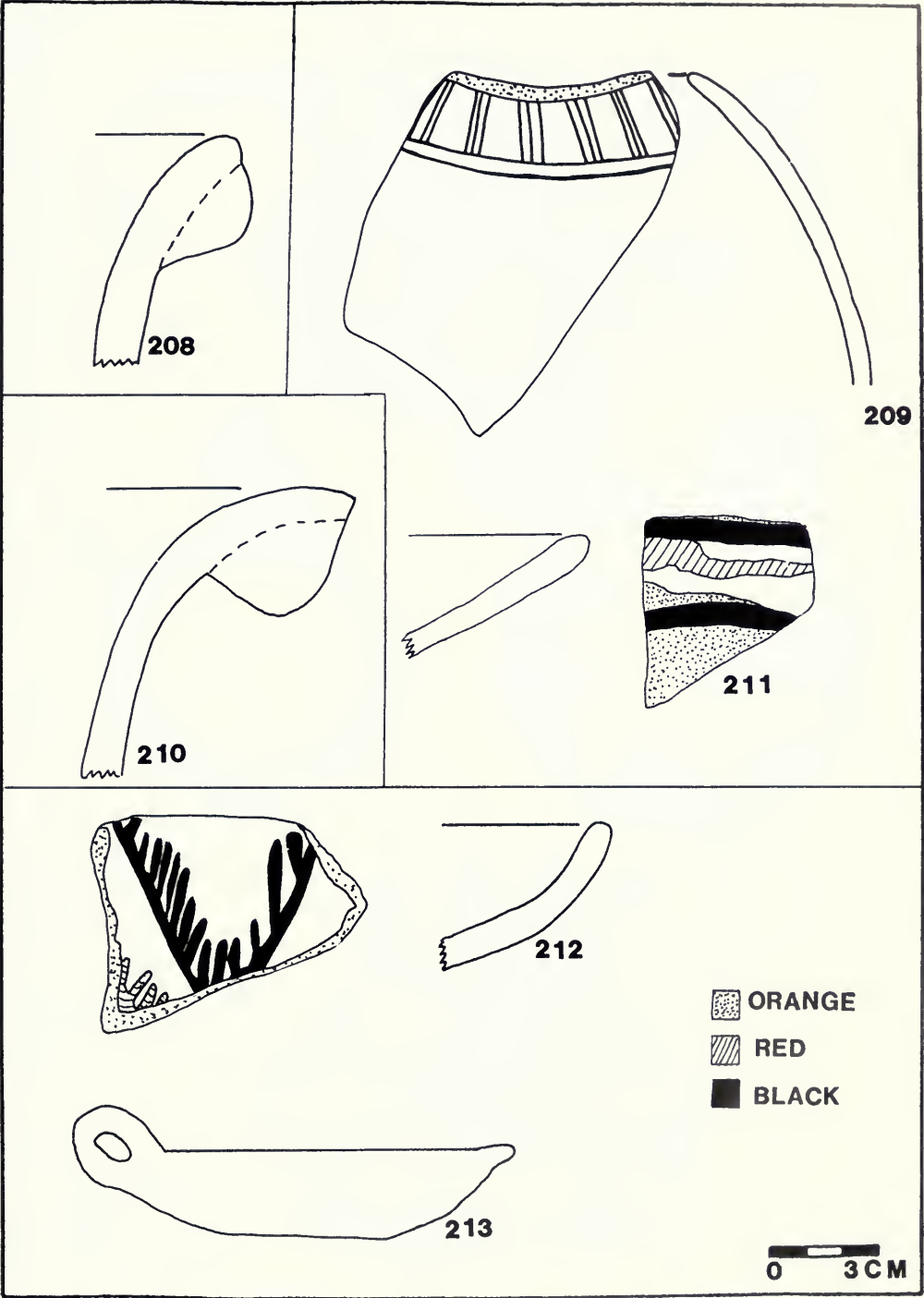
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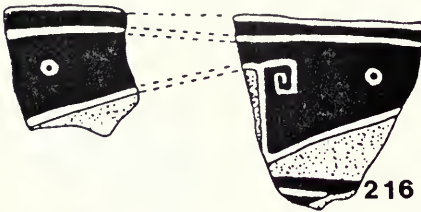
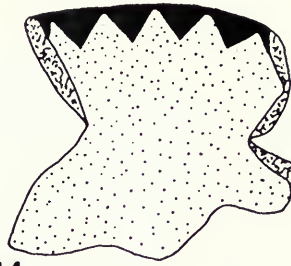








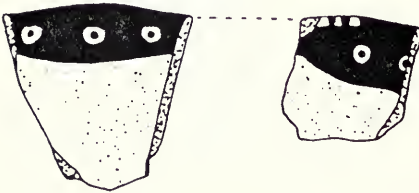
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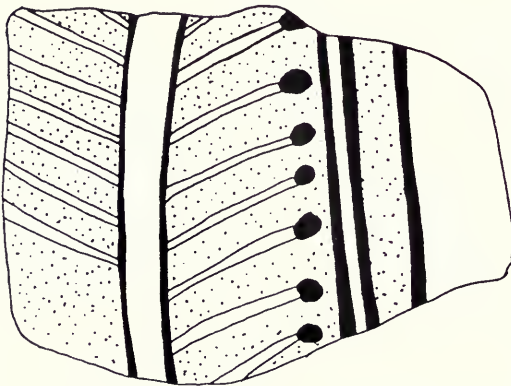
216



217



218



219

0 3CM

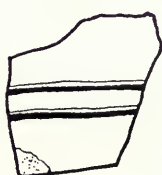




221



222



224



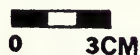
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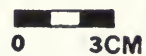
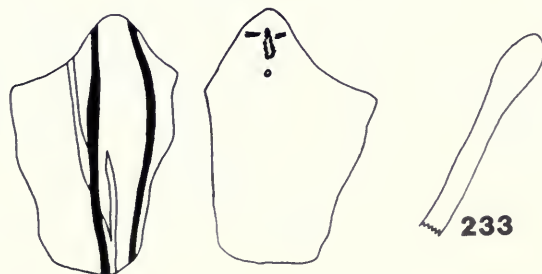
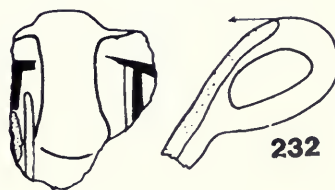
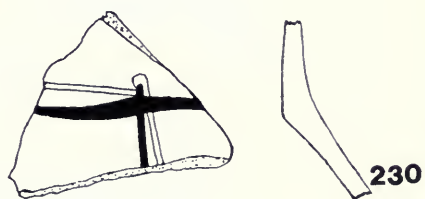
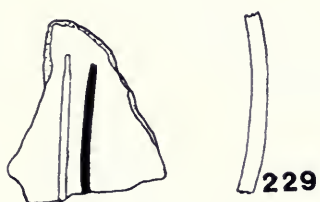
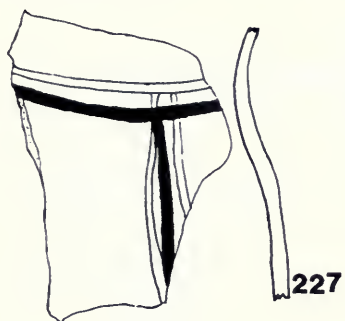
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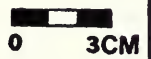
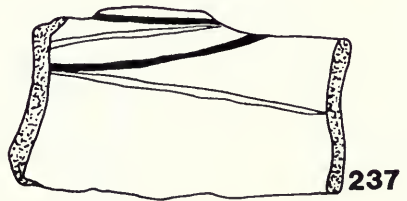
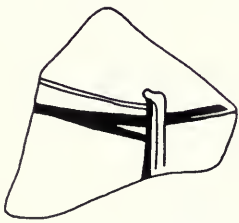
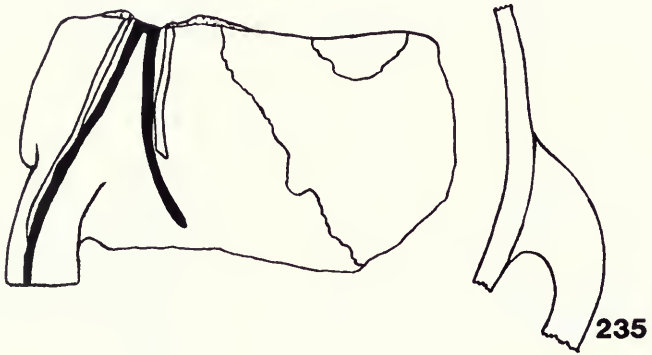
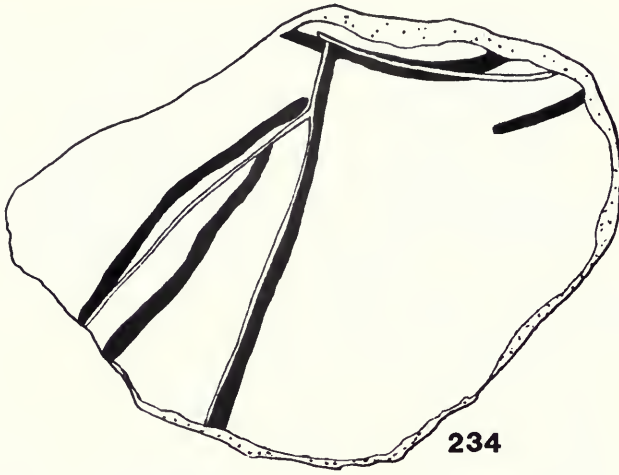


226







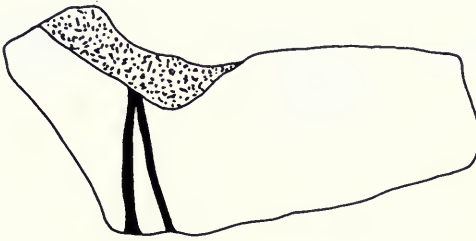




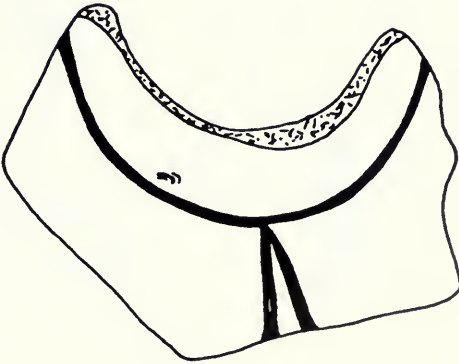
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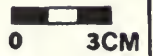
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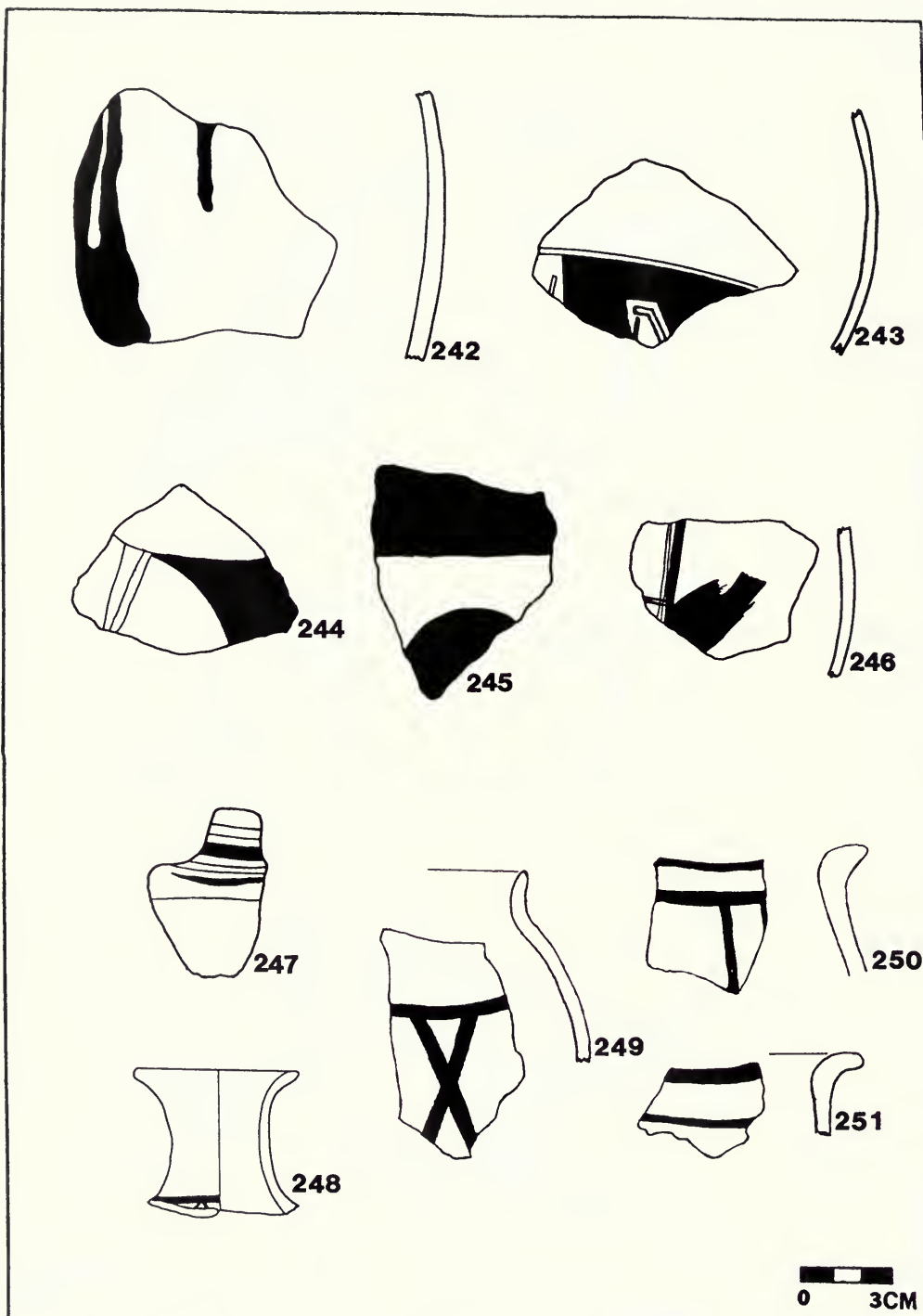


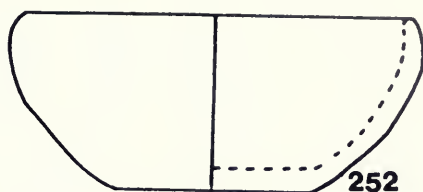
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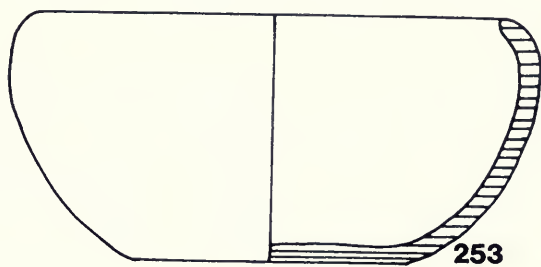
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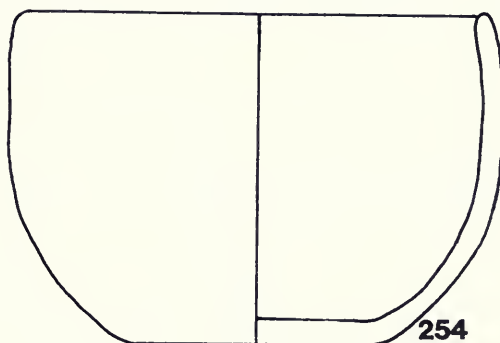




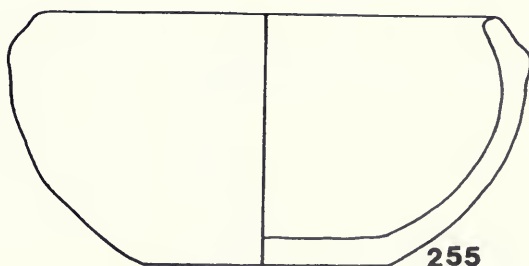
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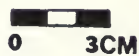
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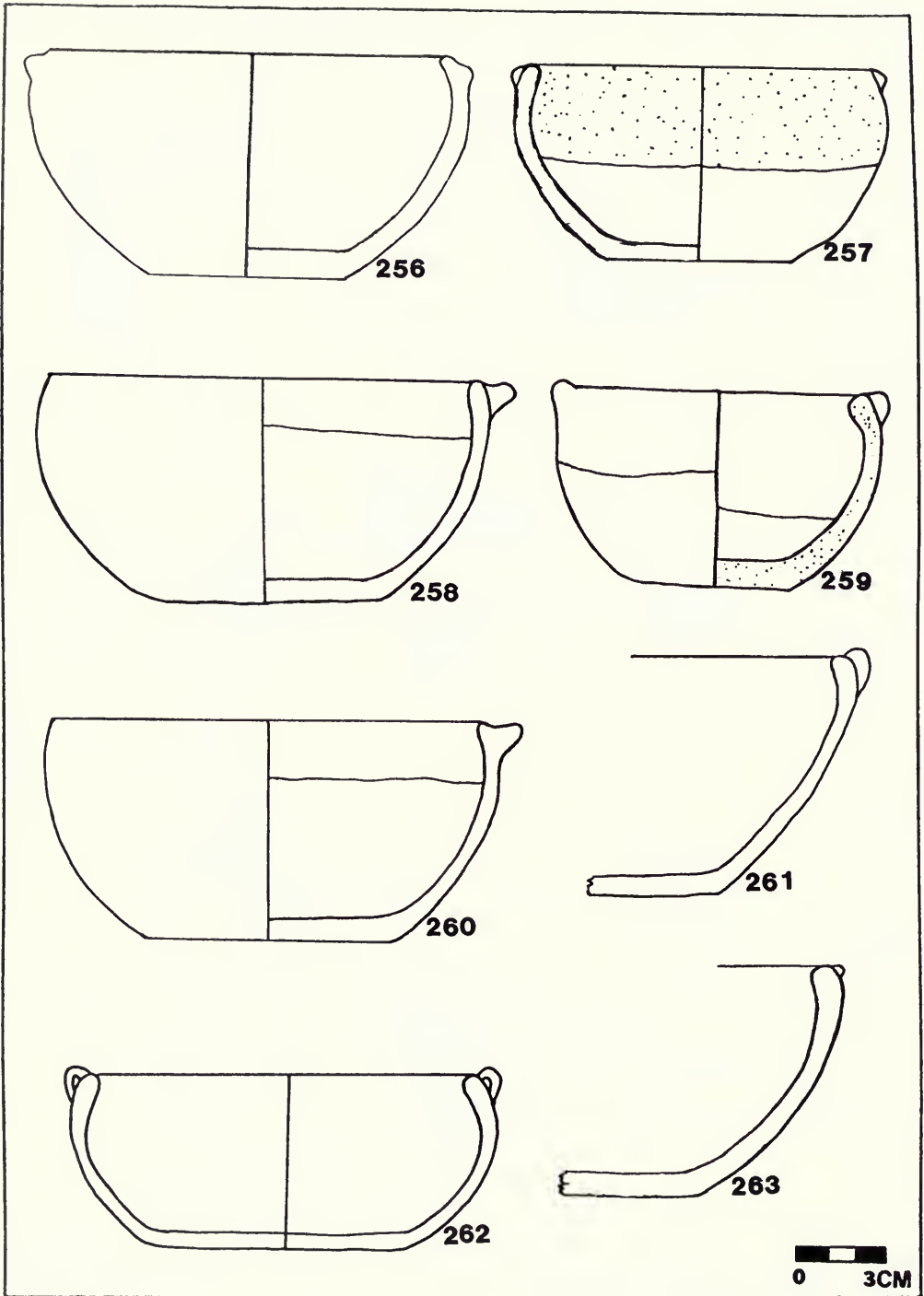
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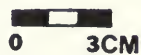
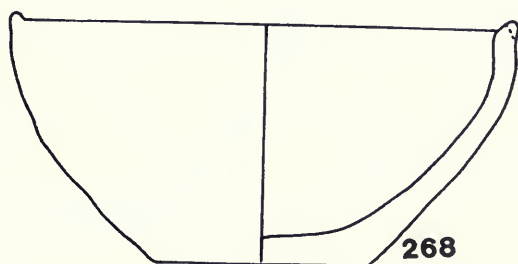
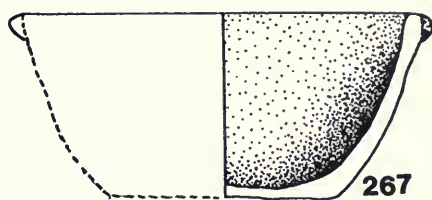
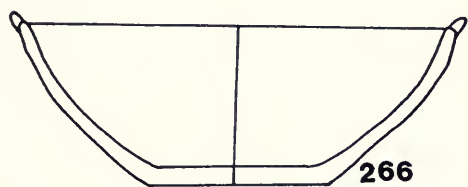
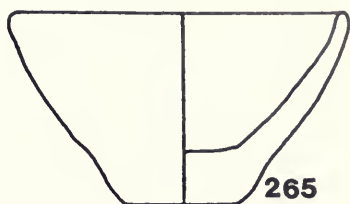
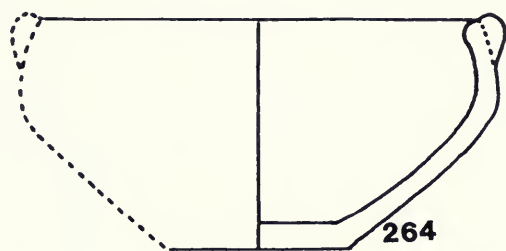


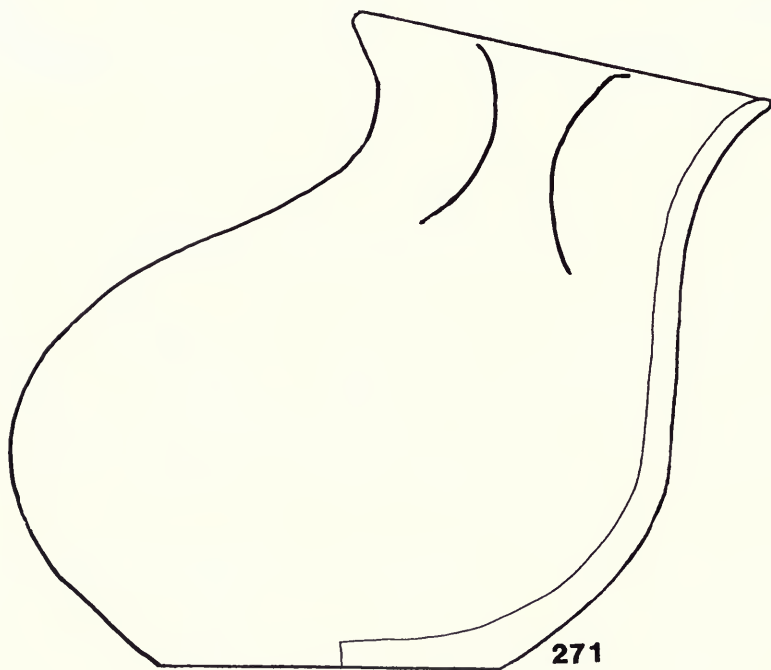
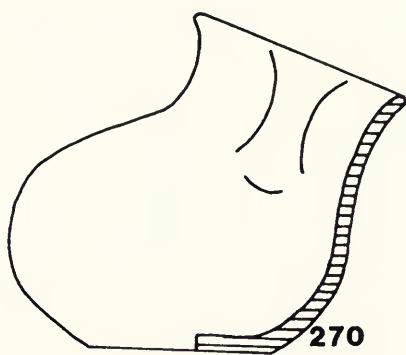
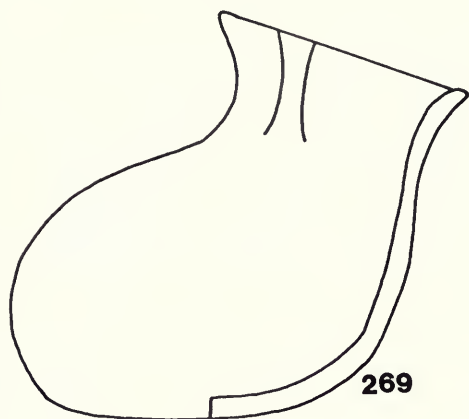
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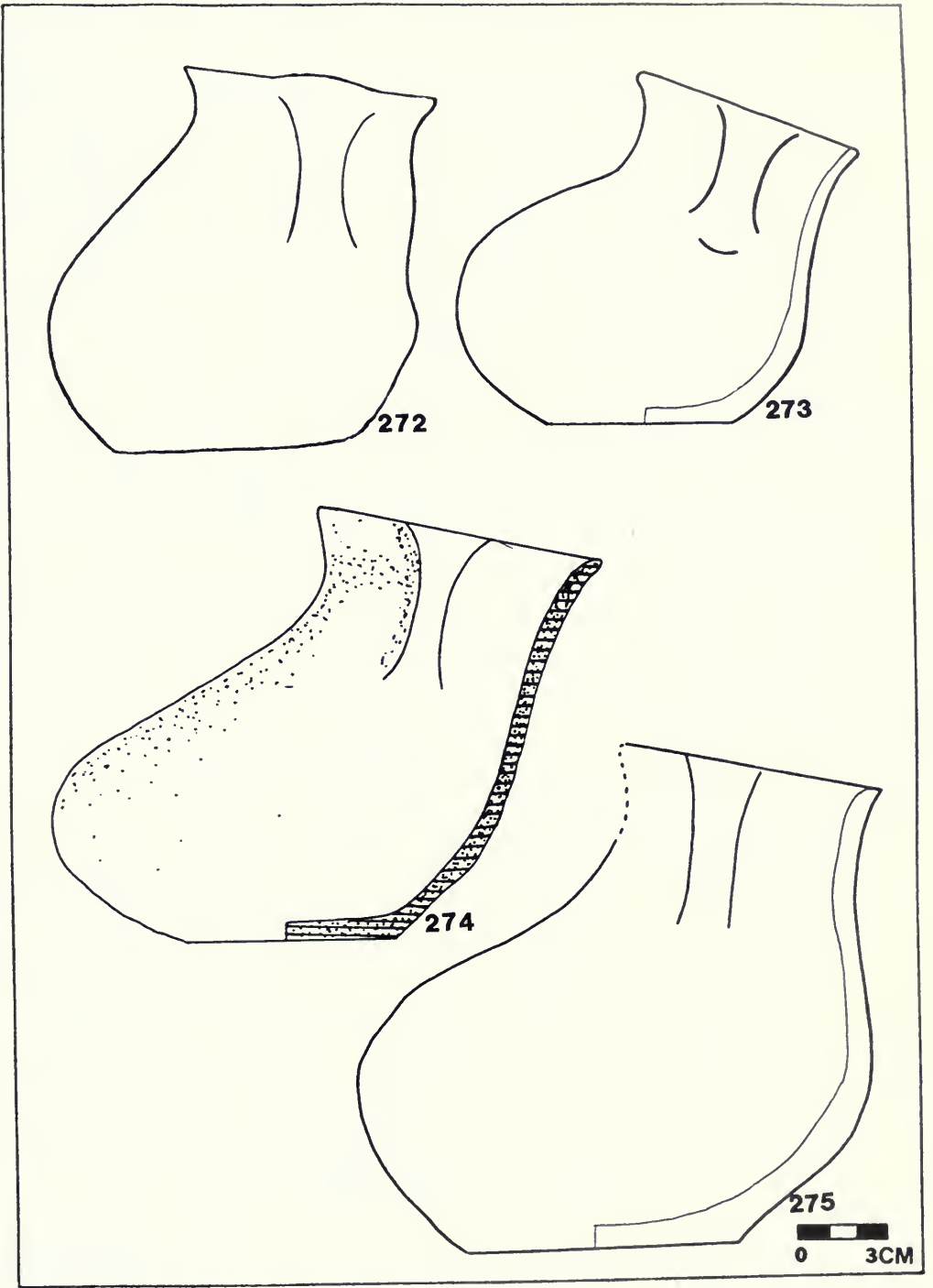


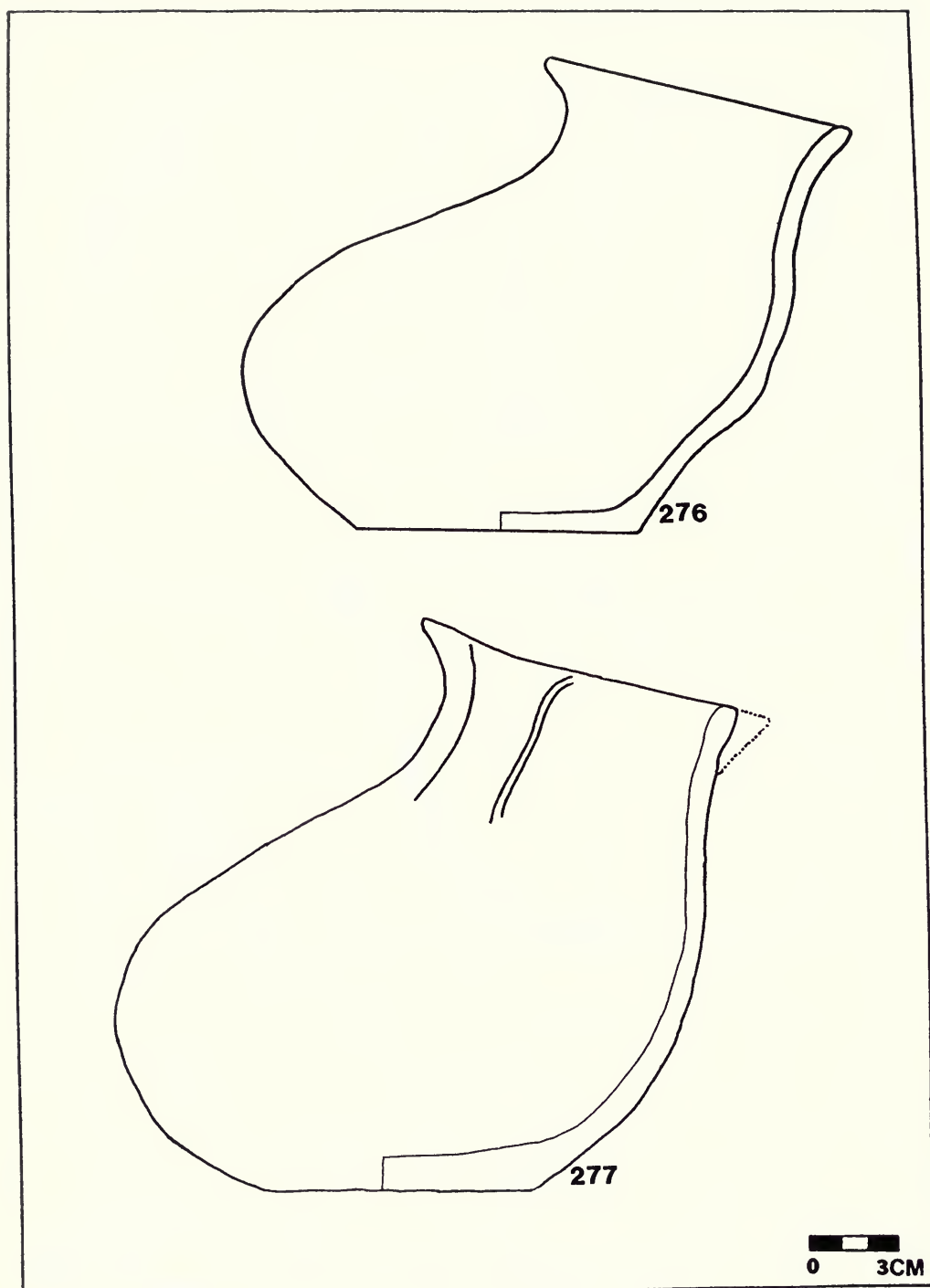




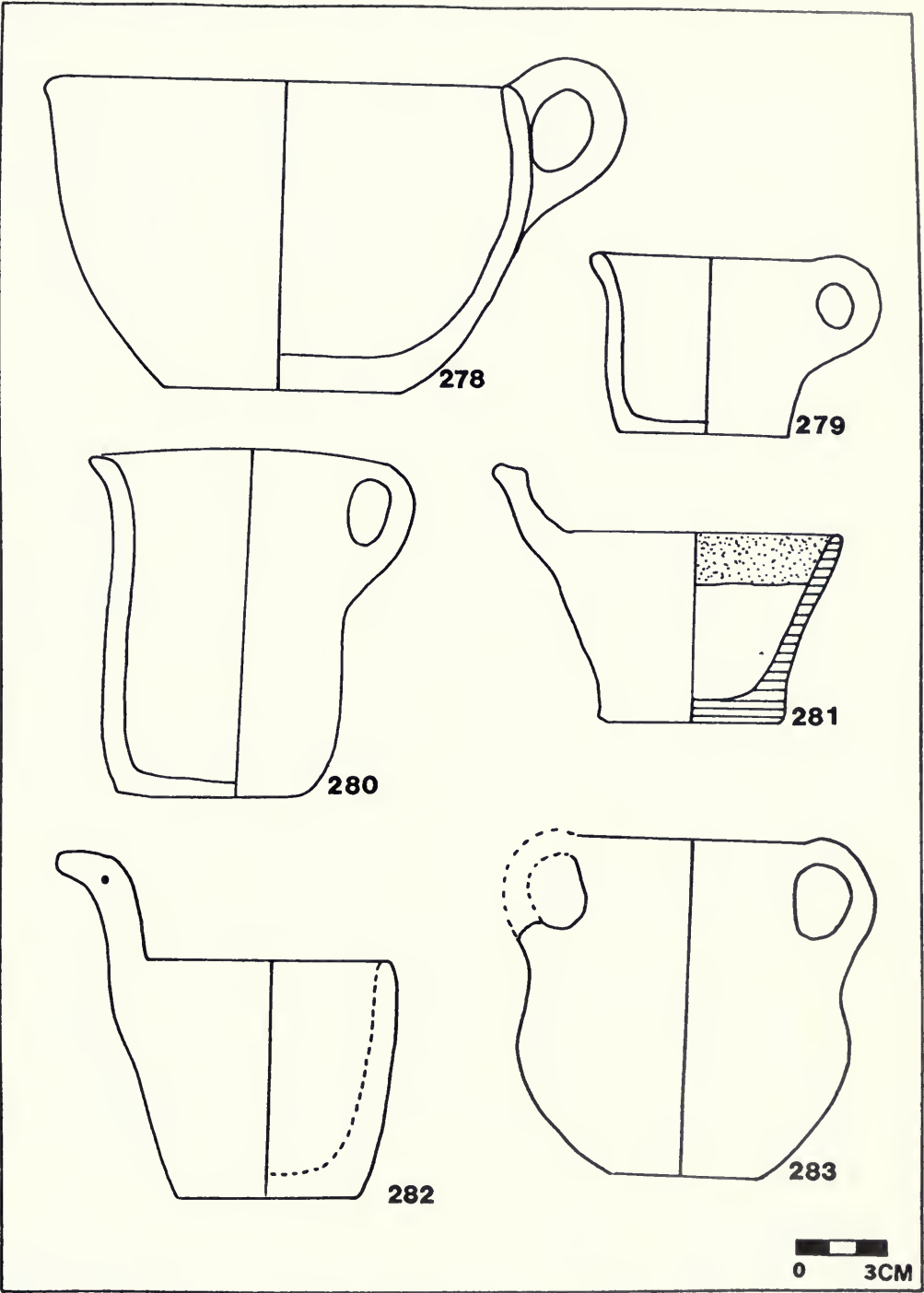


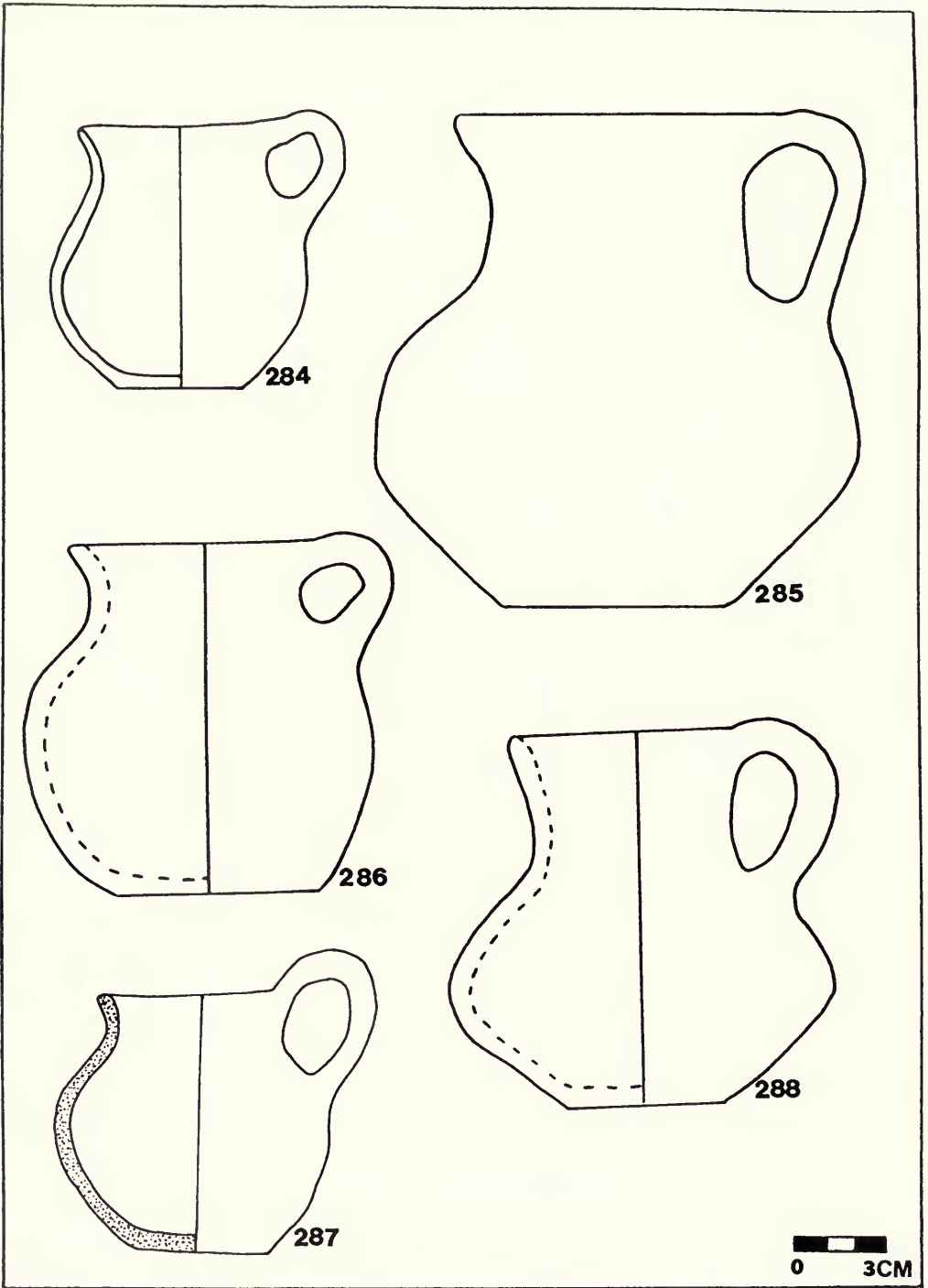
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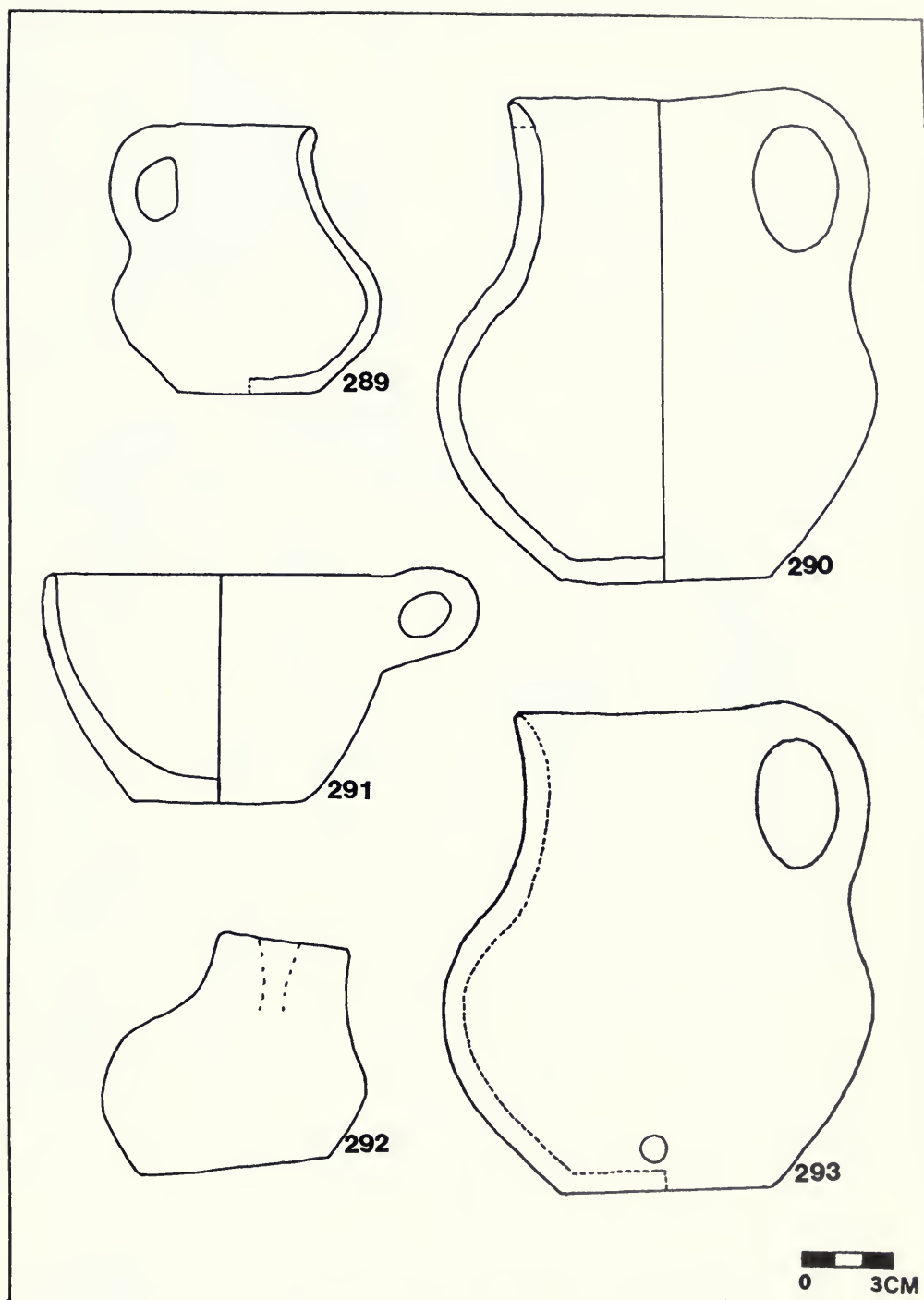


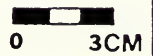
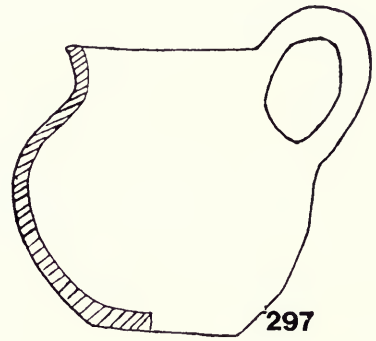
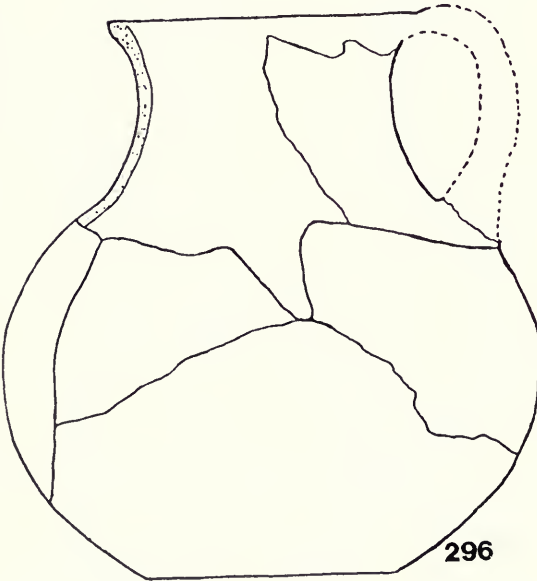
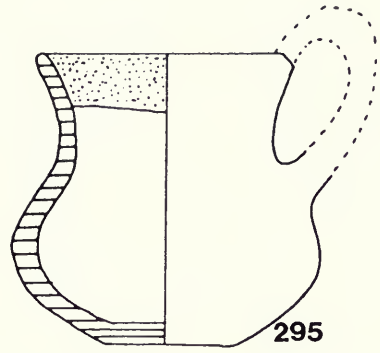
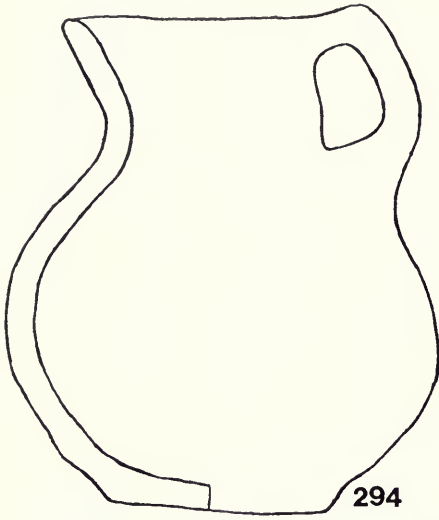


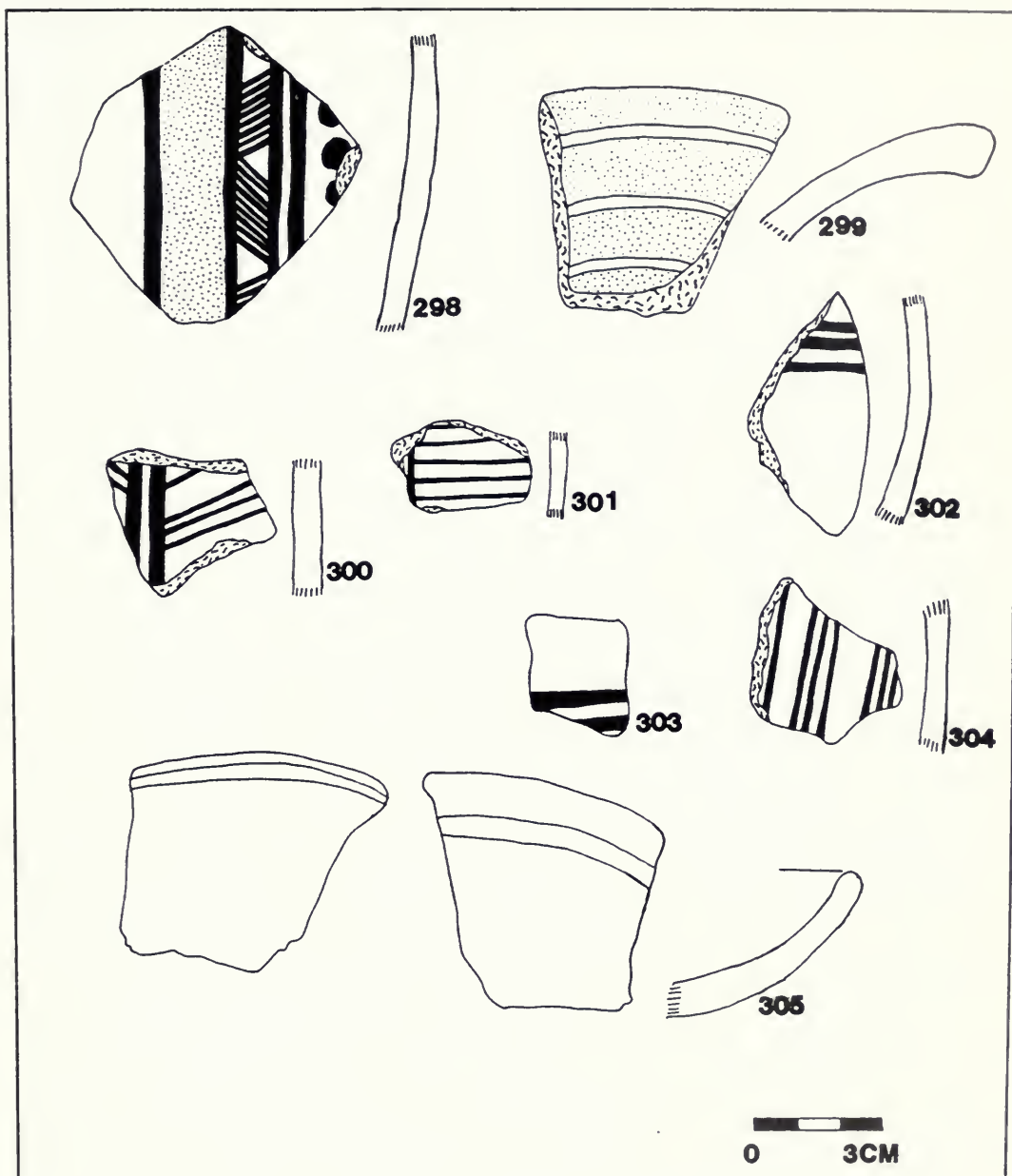




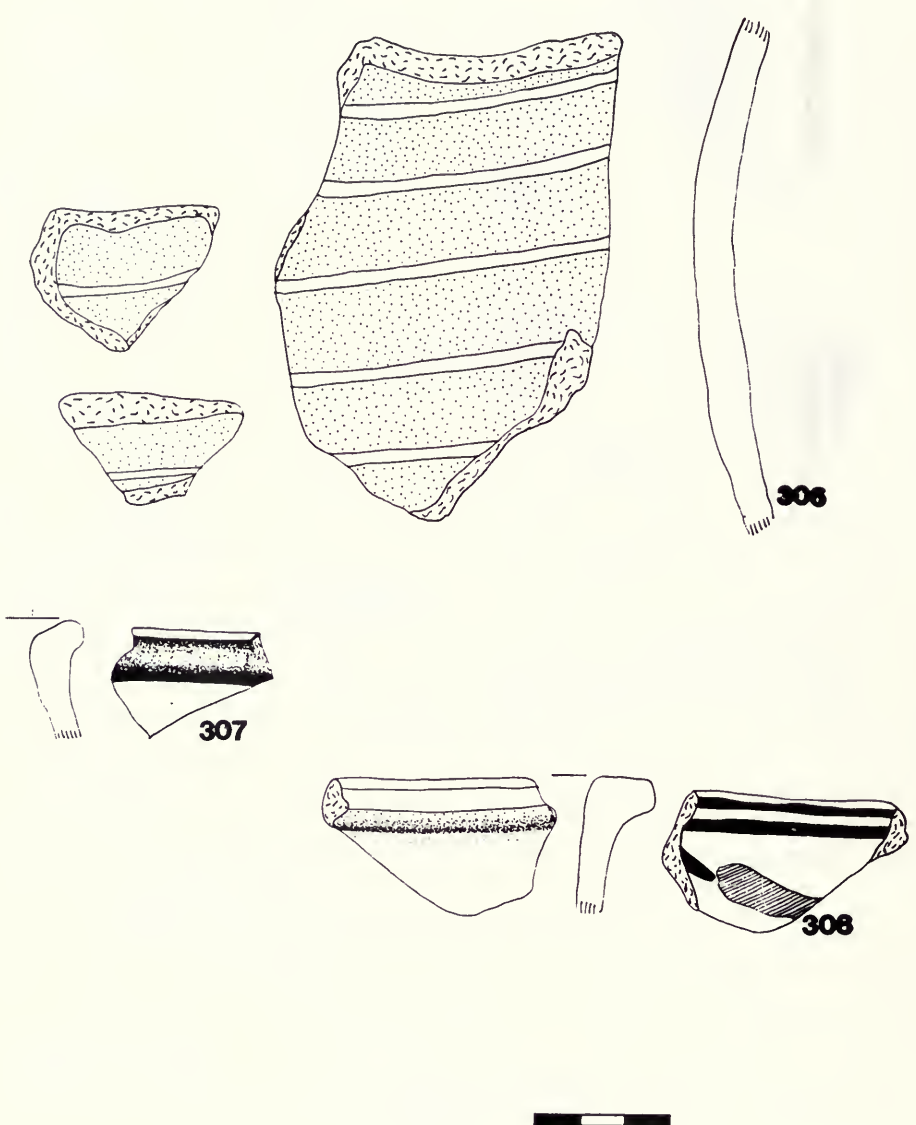
















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